

EXHIBIT 10

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International Valuation Standards (IVS)

Effective 31 January 2022



International Valuation Standards Council

International Valuation Standards

Effective 31 January 2022



International Valuation Standards Council

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Introduction

The International Valuation Standards Council (IVSC) is an independent, not-for-profit organisation committed to advancing quality in the valuation profession. Our primary objective is to build confidence and public trust in valuation by producing standards and securing their universal adoption and implementation for the valuation of assets across the world. We believe that International Valuation Standards (IVS) are a fundamental part of the financial system, along with high levels of professionalism in applying them.

Valuations are widely used and relied upon in financial and other markets, whether for inclusion in financial statements, for regulatory compliance or to support secured lending and transactional activity. The International Valuation Standards (IVS) are standards for undertaking valuation assignments using generally recognised concepts and principles that promote transparency and consistency in valuation practice. The IVSC also promotes leading practice approaches for the conduct and competency of professional valuers.

The IVSC Standards Board is the body responsible for setting the IVS. The Board has autonomy in the development of its agenda and approval of its publications. In developing the IVS, the Board:

- follows established due process in the development of any new standard, including consultation with stakeholders (valuers, users of valuation services, regulators, valuation professional organisations, etc) and public exposure of all new standards or material alterations to existing standards,
- liaises with other bodies that have a standard-setting function in the financial markets,
- conducts outreach activities including round-table discussions with invited constituents and targeted discussions with specific users or user groups.

The objective of the IVS is to increase the confidence and trust of users of valuation services by establishing transparent and consistent valuation practices. A standard will do one or more of the following:

- identify or develop globally accepted principles and definitions,
- identify and promulgate considerations for the undertaking of valuation assignments and the reporting of valuations,
- identify specific matters that require consideration and methods commonly used for valuing different types of assets or liabilities.

International Valuation Standards

The IVS consist of mandatory requirements that must be followed in order to state that a valuation was performed in compliance with the IVS. Certain aspects of the standards do not direct or mandate any particular course of action, but provide fundamental principles and concepts that must be considered in undertaking a valuation.

The IVSC Standards Boards have taken into account the following core principles when drafting the International Valuation Standards.

Core Principles of Valuation Standard Setting**1. Purpose (Objective)**

The purpose of valuation standards is to promote and maintain a high level of public trust in valuation practice by establishing appropriate requirements for valuers.

2. Valuation Standards

Valuation Standards should be principle based and adequately address the development of a credible opinion of value and the communication of that opinion to the intended user(s).

3. Development and Revisions of Standards

Standards are to be created and revised, when necessary, by way of a transparent process after appropriate exposure.

4. Jurisdiction

Departures from the standards to comply with legislative and regulatory requirements that are in conflict with the standards are allowed.

Core Principles of Valuation**1. Ethics**

Valuers must follow the ethical principles of integrity, objectivity, impartiality, confidentiality, competence and professionalism to promote and preserve the public trust.

2. Competency

At the time the valuation is submitted, valuers must have the technical skills and knowledge required to appropriately complete the valuation assignment.

3. Compliance

Valuers must disclose or report the published valuation standards used for the assignment and comply with those standards.

4. Basis (ie, Type or Standard) of Value

Valuers must select the basis (or bases) of value appropriate for the assignment and follow all applicable requirements. The basis of value (or bases) must be either defined or cited.

5. Date of Value (ie, Effective Date/Date of Valuation)

Valuers must disclose or report the date of value that is the basis of their analyses, opinions or conclusions. Valuers must also state the date they disclose or report their valuation.

*Introduction***6. Assumptions and Conditions**

Valuers must disclose significant assumptions and conditions specific to the assignment that may affect the assignment result.

7. Intended Use

Valuers must disclose or report a clear and accurate description of the intended use of the valuation.

8. Intended User(s)

Valuers must disclose or report a clear and accurate description of the intended user(s) of the valuation.

9. Scope of Work

Valuers must determine, perform, and disclose or report a scope of work that is appropriate for the assignment that will result in a credible valuation.

10. Identification of Subject of Valuation

Valuers must clearly identify what is being valued.

11. Data

Valuers must use appropriate information and data inputs in a clear and transparent manner so as to provide a credible valuation.

12. Valuation Methodology

Valuers must properly use the appropriate valuation methodology(ies) to develop a credible valuation.

13. Communication of Valuation

Valuers must clearly communicate the analyses, opinions and conclusions of the valuation to the intended user(s).

14. Record Keeping

Valuers must keep a copy of the valuation and a record of the valuation work performed for an appropriate period after completion of the assignment.

The IVS are arranged as follows:

The IVS Framework

This serves as a preamble to the IVS. The IVS Framework consists of general principles for valuers following the IVS regarding objectivity, judgement, competence and acceptable departures from the IVS.

IVS General Standards

These set forth requirements for the conduct of all valuation assignments including establishing the terms of a valuation engagement, bases of value, valuation approaches and methods, and reporting. They are designed to be applicable to valuations of all types of assets and for any valuation purpose.

IVS Asset Standards

The Asset Standards include requirements related to specific types of assets. These requirements must be followed in conjunction with the General Standards when performing a valuation of a specific asset type. The Asset Standards include certain background information on the characteristics of each asset type that

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influence value and additional asset-specific requirements on common valuation approaches and methods used.

What is the Effective Date?

This version of International Valuation Standards is published on 31 July 2021, with an effective date of **31 January 2022**. The IVSC permits early adoption from the date of publication.

Future Changes to these Standards

The IVSC Standards Board intends to continuously review the IVS and update or clarify the standards as needed to meet stakeholder and market needs. The Board has continuing projects that may result in additional standards being introduced or amendments being made to the standards in this publication at any time. News on current projects and any impending or approved changes can be found on the IVSC website at www.ivsc.org.

An FAQ document in relation to International Valuation Standards is available at www.ivsc.org.

Glossary

Glossary

Glossary

10. Overview of Glossary

- 10.1. This glossary defines certain terms used in the International Valuation Standards.
- 10.2. This glossary is only applicable to the International Valuation Standards and does not attempt to define basic valuation, accounting or finance terms, as valuers are assumed to have an understanding of such terms (see definition of “valuer”).

20. Defined Terms

20.1. Asset or Assets

To assist in the readability of the standards and to avoid repetition, the words “asset” and “assets” refer generally to items that might be subject to a valuation engagement. Unless otherwise specified in the standard, these terms can be considered to mean “asset, group of assets, liability, group of liabilities, or group of assets and liabilities”.

20.2. Basis (bases) of Value

The fundamental premises on which the reported values are or will be based (see IVS 105 *Valuation Approaches and Methods*, para 10.1) (in some jurisdictions also known as standard of value).

20.3. Client

The word “client” refers to the person, persons, or entity for whom the valuation is performed. This may include external clients (ie, when a valuer is engaged by a third-party client) as well as internal clients (ie, valuations performed for an employer).

20.4. Cost(s) (noun)

The consideration or expenditure required to acquire or create an asset.

20.5. Discount Rate(s)

A rate of return used to convert a monetary sum, payable or receivable in the future, into a present value.

20.6. Equitable Value

This is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties.

*International Valuation Standards***20.7. Fair Market Value**

1. The Organisation for Economic Co-operation and Development (OECD) defines “fair market value” as the price a willing buyer would pay a willing seller in a transaction on the open market.
2. For United States tax purposes, Regulation §20.2031-1 states: “The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts”¹.

20.8. Fair Value (International Financial Reporting Standards)

IFRS 13 defines “fair value” as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

20.9. Intended Use

The use(s) of a valuer's reported valuation or valuation review results, as identified by the valuer based on communication with the client.

20.10. Intended User

The client and any other party as identified, by name or type, as users of the valuation or valuation review report by the valuer based on communication with the client.

20.11. Investment Value

The value of an asset to the owner or a prospective owner given individual investment or operational objectives (may also be known as worth).

20.12. Jurisdiction

The word “jurisdiction” refers to the legal and regulatory environment in which a valuation engagement is performed. This generally includes laws and regulations set by governments (eg, country, state and municipal) and, depending on the purpose, rules set by certain regulators (eg, banking authorities and securities regulators).

20.13. Liquidation Value

The amount that would be realised when an asset or group of assets are sold on a piecemeal basis. Liquidation value should take into account the costs of getting the assets into saleable condition as well as those of the disposal activity. Liquidation value can be determined under two different premises of value (see IVS 104 *Bases of Value*, section 80):

- (a) an orderly transaction with a typical marketing period; or
- (b) a forced transaction with a shortened marketing period.

¹ United States Internal Revenue Service

*Glossary***20.14. Market Value**

The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

20.15. May

The word "may" describes actions and procedures that valuers have a responsibility to consider. Matters described in this fashion require the valuer's attention and understanding. How and whether the valuer implements these matters in the valuation engagement will depend on the exercise of professional judgement in the circumstances consistent with the objectives of the standards.

20.16. Must

The word "must" indicates an unconditional responsibility. The valuer must fulfill responsibilities of this type in all cases in which the circumstances exist to which the requirement applies.

20.17. Participant

The word "participant" refers to the relevant participants pursuant to the basis (or bases) of value used in a valuation engagement (see IVS 104 *Bases of Value*). Different bases of value require valuers to consider different perspectives, such as those of "market participants" (eg, market value, IFRS fair value) or a particular owner or prospective buyer (eg, investment value).

20.18. Price (noun)

The monetary or other consideration asked, offered or paid for an asset, which may be different from the value.

20.19. Purpose

The word "purpose" refers to the reason(s) a valuation is performed. Common purposes include (but are not limited to) financial reporting, tax reporting, litigation support, transaction support, and to support secured lending decisions.

20.20. Should

The word "should" indicates responsibilities that are presumptively mandatory. The valuer must comply with requirements of this type unless the valuer demonstrates that alternative actions which were followed under the circumstances were sufficient to achieve the objectives of the standards.

In the rare circumstances in which the valuer believes the objectives of the standard can be met by alternative means, the valuer must document why the indicated action was not deemed to be necessary and/or appropriate.

If a standard provides that the valuer "should" consider an action or procedure, consideration of the action or procedure is presumptively mandatory, while the action or procedure is not.

*International Valuation Standards***20.21. Significant and/or Material**

Assessing significance and materiality require professional judgement. However, that judgement should be made in the following context:

- Aspects of a valuation (including inputs, assumptions, special assumptions, and methods and approaches applied) are considered to be significant/material if their application and/or impact on the valuation could reasonably be expected to influence the economic or other decisions of users of the valuation; and judgments about materiality are made in light of the overall valuation engagement and are affected by the size or nature of the subject asset.
- As used in these standards, “material/materiality” refers to materiality to the valuation engagement, which may be different from materiality considerations for other purposes, such as financial statements and their audits.

20.22. Subject or Subject Asset

These terms refer to the asset(s) valued in a particular valuation engagement.

20.23. Synergistic Value

The result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values. If the synergies are only available to one specific buyer, then synergistic value will differ from market value, as the synergistic value will reflect particular attributes of an asset that are only of value to a specific purchaser. The added value above the aggregate of the respective interests is often referred to as marriage value.

20.24. Valuation

The act or process of determining an opinion or conclusion of value of an asset on a stated basis of value at a specified date in compliance with IVS.

20.25. Valuation Approach

In general, a way of estimating value that employs one or more specific valuation methods (see IVS 105 *Valuation Approaches and Methods*).

20.26. Valuation Method

Within valuation approaches, a specific way to estimate a value.

20.27. Valuation Purpose or Purpose of Valuation

See "Purpose".

20.28. Valuation Reviewer

A “valuation reviewer” is a professional valuer engaged to review the work of another valuer. As part of a valuation review, that professional may perform certain valuation procedures and/or provide an opinion of value.

*Glossary***20.29. Value (noun)**

The opinion resulting from a valuation process that is compliant with IVS. It is an estimate of either the most probable monetary consideration for an interest in an asset or the economic benefits of holding an interest in an asset on a stated basis of value.

20.30. Valuer

A “valuer” is an individual, group of individuals or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to execute a valuation in an objective, unbiased, ethical and competent manner. In some jurisdictions, licensing is required before one can act as a valuer.

20.31. Weight

The word “weight” refers to the amount of reliance placed on a particular indication of value in reaching a conclusion of value (eg, when a single method is used, it is afforded 100% weight).

20.32. Weighting

The word “weighting” refers to the process of analysing and reconciling differing indications of values, typically from different methods and/or approaches. This process does not include the averaging of valuations, which is not acceptable.

20.33. Worth

See investment value.

IVS Framework

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10. Compliance with Standards

- 10.1. When a statement is made that a *valuation* will be, or has been, undertaken in accordance with the IVS, it is implicit that the *valuation* has been prepared in compliance with all relevant standards issued by the IVSC.
- 10.2. In order for a *valuation* to be compliant with IVS the *valuer must* comply with all the requirements contained within IVS.
- 10.3. A *valuer* can only depart from International Valuation Standards (IVS) as described in section 60 of this *Framework*.

20. Assets and Liabilities

- 20.1. The standards can be applied to the *valuation* of both *assets* and *liabilities* and present and future claims on *assets* and *liabilities*. To assist the readability of these standards, the words *asset* or *assets* have been defined to include liability or *liabilities* and groups of *assets*, *liabilities*, or *assets* and *liabilities*, except where it is expressly stated otherwise, or is clear from the context that *liabilities* are excluded.

30. Valuer

- 30.1. *Valuer* has been defined as “an individual, group of individuals, or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to undertake a *valuation* in an objective, unbiased, ethical and competent manner. In some *jurisdictions*, licensing is required before one can act as a *valuer*. Because a *valuation reviewer* must also be a *valuer*, to assist with the legibility of these standards, the term *valuer* includes *valuation reviewers* except where it is expressly stated otherwise, or is clear from the context that *valuation reviewers* are excluded.

40. Objectivity

- 40.1. The process of *valuation* requires the *valuer* to make impartial judgements as to the reliability of inputs and assumptions. For a *valuation* to be credible, it is important that those judgements are made in a way that promotes transparency and minimises the influence of any subjective factors on the process. Judgement used in a *valuation* *must* be applied objectively to avoid biased analyses, opinions and conclusions.
- 40.2. It is a fundamental expectation that, when applying these standards, appropriate controls and procedures are in place to ensure the necessary degree of objectivity in the valuation process so that the results are free from bias. The IVSC *Code of Ethical Principles for Professional Valuers* provides an example of an appropriate framework for professional conduct.

50. Competence

- 50.1. *Valuations must* be prepared by an individual, group of individuals or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to execute a *valuation* in an objective, unbiased, ethical and competent manner and having the appropriate technical skills, experience and knowledge of the subject of the *valuation*, the market(s) in which it trades and the *purpose of the valuation*.
- 50.2. If a *valuer* does not possess all of the necessary technical skills, experience and knowledge to perform all aspects of a *valuation*, it is acceptable for the *valuer* to seek assistance from specialists in certain aspects of the overall assignment, providing this is disclosed in the scope of work (see IVS 101 *Scope of Work*) and the report (see IVS 103 *Reporting*).
- 50.3. The *valuer must* have the technical skills, experience and knowledge to understand, interpret and utilise the work of any specialists.

60. Departures

- 60.1. A “*departure*” is a circumstance where specific legislative, regulatory or other authoritative requirements *must* be followed that differ from some of the requirements within IVS. Departures are mandatory in that a *valuer must* comply with legislative, regulatory and other authoritative requirements appropriate to the *purpose and jurisdiction* of the *valuation* to be in compliance with IVS. A *valuer* may still state that the *valuation* was performed in accordance with IVS when there are departures in these circumstances.
- 60.2. The requirement to depart from IVS pursuant to legislative, regulatory or other authoritative requirements takes precedence over all other IVS requirements.
- 60.3. As required by IVS 101 *Scope of Work*, para 20.3 (n) and IVS 103 *Reporting*, para 10.2 the nature of any departures *must* be identified (for example, identifying that the *valuation* was performed in accordance with IVS and local tax regulations). If there are any departures that *significantly* affect the nature of the procedures performed, inputs and assumptions used, and/or valuation conclusion(s), a *valuer must* also disclose the specific legislative, regulatory or other authoritative requirements and the *significant* ways in

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which they differ from the requirements of IVS (for example, identifying that the relevant *jurisdiction* requires the use of only a market approach in a circumstance where IVS would indicate that the income approach *should* be used).

- 60.4. Departure deviations from IVS that are not the result of legislative, regulatory or other authoritative requirements are not permitted in *valuations* performed in accordance with IVS.

General Standards

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IVS 101 Scope of Work

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10. Introduction

- 10.1. A scope of work (sometimes referred to as terms of engagement) describes the fundamental terms of a *valuation*, such as the *asset(s)* being valued, the *purpose* of the *valuation* and the responsibilities of parties involved in the *valuation*.
- 10.2. This standard is intended to apply to a wide spectrum of valuation assignments, including:
 - (a) *valuations* performed by *valuers* for their own employers (employed),
 - (b) *valuations* performed by *valuers* for *clients* other than their employers (engaged), and
 - (c) valuation reviews where the *valuation reviewer* may not be required to provide their own opinion of *value*.

20. General Requirements

- 20.1. All valuation advice and the work undertaken in its preparation *must* be appropriate for the intended *purpose*.
- 20.2. A *valuer* *must* ensure that the intended recipient(s) of the valuation advice understand(s) what is to be provided and any limitations on its use before it is finalised and reported.
- 20.3. A *valuer* *must* communicate the scope of work to its *client* prior to completion of the assignment, including the following:
 - (a) Identity of the *valuer*: The *valuer* may be an individual, group of individuals or a firm. If the *valuer* has any material connection or involvement with the subject *asset* or the other parties to the valuation assignment, or if there are any other factors that could limit the *valuer's* ability to provide an unbiased and objective *valuation*, such factors

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must be disclosed at the outset. If such disclosure does not take place, the valuation assignment is not in compliance with IVS. If the *valuer* needs to seek *material* assistance from others in relation to any aspect of the assignment, the nature of such assistance and the extent of reliance *must* be made clear.

- (b) Identity of the *client(s)* (if any): Confirmation of those for whom the valuation assignment is being produced is important when determining the form and content of the report to ensure that it contains information relevant to their needs.
- (c) Identity of other *intended users* (if any): It is important to understand whether there are any other *intended users* of the valuation report, their identity and their needs, to ensure that the report content and format meets those users' needs.
- (d) *Asset(s)* being valued: The subject asset in the valuation assignment *must* be clearly identified.
- (e) The valuation currency: The currency for the *valuation* and the final valuation report or conclusion *must* be established. For example, a *valuation* might be prepared in euros or US dollars. This requirement is particularly important for valuation assignments involving *assets* in multiple countries and/or cash flows in multiple currencies.
- (f) Purpose of the *valuation*: The *purpose* for which the valuation assignment is being prepared *must* be clearly identified as it is important that valuation advice is not used out of context or for *purposes* for which it is not intended. The *purpose* of the *valuation* will also typically influence or determine the *basis/bases of value* to be used.
- (g) Basis/bases of value used: As required by IVS 104 *Bases of Value*, the valuation basis *must* be appropriate for the *purpose* of the *valuation*. The source of the definition of any *basis of value* used *must* be cited or the basis explained. This requirement is not applicable to a valuation review where no opinion of *value* is to be provided and the reviewer is not required to comment on the *basis of value* used.
- (h) Valuation date: The valuation date *must* be stated. If the valuation date is different from the date on which the valuation report is issued or the date on which investigations are to be undertaken or completed then where appropriate, these dates *should* be clearly distinguished.
- (i) The nature and extent of the *valuer's* work and any limitations thereon: Any limitations or restrictions on the inspection, enquiry and/or analysis in the valuation assignment *must* be identified (see IVS *Framework*, paras 60.1-60.4) If relevant information is not available because the conditions of the assignment restrict the investigation, these restrictions and any necessary assumptions or special assumptions (see IVS 104 *Bases of Value*, paras 200.1-200.5) made as a result of the restriction *must* be identified.
- (j) The nature and sources of information upon which the *valuer* relies: The nature and source of any relevant information that is to be relied upon and the extent of any verification to be undertaken during the valuation process *must* be identified.

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- (k) *Significant* assumptions and/or special assumptions: All *significant* assumptions and special assumptions that are to be made in the conduct and reporting of the valuation assignment *must* be identified.
 - (l) The type of report being prepared: The format of the report, that is, how the *valuation* will be communicated, *must* be described.
 - (m) Restrictions on use, distribution and publication of the report: Where it is necessary or desirable to restrict the use of the *valuation* or those relying on it, the *intended users* and restrictions *must* be clearly communicated.
 - (n) That the *valuation* will be prepared in compliance with IVS and that the *valuer* will assess the appropriateness of all *significant* inputs: The nature of any departures *must* be explained, for example, identifying that the *valuation* was performed in accordance with IVS and local tax regulations. See *IVS Framework* paras 60.1-60.4 relating to departures.
- 20.4. Wherever possible, the scope of work *should* be established and agreed between parties to a valuation assignment prior to the *valuer* beginning work. However, in certain circumstances, the scope of a valuation engagement *may* not be clear at the start of that engagement. In such cases, as the scope becomes clear, *valuers* *must* communicate and agree the scope of work to their *client*.
- 20.5. A written scope of work *may* not be necessary. However, since *valuers* are responsible for communicating the scope of work to their *client*, a written scope of work *should* be prepared.
- 20.6. Some aspects of the scope of work *may* be addressed in documents such as standing engagement instructions, master services agreements or a company's internal policies and procedures.
- 30. Changes to Scope of Work**
- 30.1. Some of the items in para 20.3 *may* not be determinable until the valuation assignment is in progress, or changes to the scope *may* become necessary during the course of the assignment due to additional information becoming available or matters emerging that require further investigation. As such, whilst the scope of work *may* be established at the outset, it *may* also be established over time throughout the course of the assignment.
- 30.2. In valuation assignments where the scope of work changes over time, the items in para 20.3 and any changes made over time *must* be communicated to the *client* before the assignment is completed and the valuation report is issued.

IVS 102 Investigations and Compliance

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10. General Principle

- 10.1. To be compliant with IVS, valuation assignments, including valuation reviews, *must* be conducted in accordance with all of the principles set out in IVS that are appropriate for the *purpose* and the terms and conditions set out in the scope of work.

20. Investigations

- 20.1. Investigations made during the course of a valuation assignment *must* be appropriate for the *purpose* of the valuation assignment and the *basis(es) of value*. References to a *valuation* or valuation assignment in this standard include a valuation review.
- 20.2. Sufficient evidence *must* be assembled by means such as inspection, inquiry, computation and analysis to ensure that the *valuation* is properly supported. When determining the extent of evidence necessary, professional judgement is required to ensure the information to be obtained is adequate for the *purpose* of the *valuation*.
- 20.3. Limits *may* be agreed on the extent of the *valuer's* investigations. Any such limits *must* be noted in the scope of work. However, IVS 105 *Valuation Approaches and Methods*, para 10.7 requires *valuers* to perform sufficient analysis to evaluate all inputs and assumptions and their appropriateness for the valuation *purpose*. If limitations on investigations are so substantial that the *valuer* cannot sufficiently evaluate the inputs and assumptions, the valuation engagement *must* not state that it has been performed in compliance with IVS.
- 20.4. When a valuation assignment involves reliance on information supplied by a party other than the *valuer*, consideration *should* be given as to whether the information is credible or that the information may otherwise be relied upon without adversely affecting the credibility of the valuation opinion. *Significant* inputs provided to the *valuer* (eg, by management/owners) *should* be considered, investigated and/or corroborated. In cases where credibility or reliability of information supplied cannot be supported, consideration *should* be given as to whether or how such information is used.
- 20.5. In considering the credibility and reliability of information provided, *valuers* *should* consider matters such as:
- (a) the *purpose* of the *valuation*,
 - (b) the *significance* of the information to the valuation conclusion,

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- (c) the expertise of the source in relation to the subject matter, and
 - (d) whether the source is independent of either the subject asset and/or the recipient of the *valuation* (see IVS 101 *Scope of Work*, paras 20.3 (a)).
- 20.6. The *purpose* of the *valuation*, the *basis of value*, the extent and limits on the investigations and any sources of information that *may* be relied upon are part of the valuation assignment's scope of work that *must* be communicated to all parties to the valuation assignment (see IVS 101 *Scope of Work*).
- 20.7. If, during the course of an assignment, it becomes clear that the investigations included in the scope of work will not result in a credible *valuation*, or information to be provided by third parties is either unavailable or inadequate, or limitations on investigations are so substantial that the *valuer* cannot sufficiently evaluate the inputs and assumptions, the valuation assignment will not comply with IVS.
- 30. Valuation Record**
- 30.1. A record *must* be kept of the work performed during the valuation process and the basis for the work on which the conclusions were reached for a reasonable period after completion of the assignment, having regard to any relevant statutory, legal or regulatory requirements. Subject to any such requirements, this record *should* include the key inputs, all calculations, investigations and analyses relevant to the final conclusion, and a copy of any draft or final report(s) provided to the *client*.
- 40. Compliance with Other Standards**
- 40.1. As noted in the IVS *Framework*, when statutory, legal, regulatory or other authoritative requirements *must* be followed that differ from some of the requirements within IVS, a *valuer* *must* follow the statutory, legal, regulatory or other authoritative requirements (called a “*departure*”). Such a *valuation* has still been performed in overall compliance with IVS.
- 40.2. Most other sets of requirements, such as those written by Valuation Professional Organisations, other professional bodies, or firms’ internal policies and procedures, will not contradict IVS and, instead, typically impose additional requirements on *valuers*. Such standards *may* be followed in addition to IVS without being seen as *departures* as long as all of the requirements in IVS are fulfilled.

IVS 103 Reporting

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10. Introduction

- 10.1. It is essential that the valuation report communicates the information necessary for proper understanding of the *valuation* or valuation review. A report *must* provide the *intended users* with a clear understanding of the *valuation*.
- 10.2. To provide useful information, the report *must* set out a clear and accurate description of the scope of the assignment, its *purpose* and *intended use* (including any limitations on that use) and disclosure of any assumptions, special assumptions (IVS 104 *Bases of Value*, para 200.4), *significant* uncertainty or limiting conditions that directly affect the *valuation*.
- 10.3. This standard applies to all valuation reports or reports on the outcome of a valuation review which *may* range from comprehensive narrative reports to abbreviated summary reports.
- 10.4. For certain asset classes there *may* be variations from these standards or additional requirements to be reported upon. These are found in the relevant IVS Asset Standards.

20. General Requirements

- 20.1. The *purpose* of the *valuation*, the complexity of the *asset* being valued and the users' requirements will determine the level of detail appropriate to the valuation report. The format of the report *should* be agreed with all parties as part of establishing a scope of work (see IVS 101 *Scope of Work*).
- 20.2. Compliance with this standard does not require a particular form or format of report; however, the report *must* be sufficient to communicate to the *intended users* the scope of the valuation assignment, the work performed and the conclusions reached.
- 20.3. The report *should* also be sufficient for an appropriately experienced valuation professional with no prior involvement with the valuation engagement to review the report and understand the items in paras 30.1 and 40.1, as applicable.

30. Valuation Reports

- 30.1. Where the report is the result of an assignment involving the *valuation* of an *asset* or *assets*, the report *must* convey the following, at a minimum:
 - (a) the scope of the work performed, including the elements noted in para 20.3 of IVS 101 *Scope of Work*, to the extent that each is applicable to the assignment,

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- (b) *intended use*,
 - (c) *intended users*,
 - (d) the *purpose*,
 - (e) the approach or approaches adopted,
 - (f) the method or methods applied,
 - (g) the key inputs used,
 - (h) the assumptions made,
 - (i) the conclusion(s) of *value* and principal reasons for any conclusions reached, and
 - (j) the date of the report (which *may* differ from the valuation date).
- 30.2. Some of the above requirements *may* be explicitly included in a report or incorporated into a report through reference to other documents (engagement letters, scope of work documents, internal policies and procedures, etc).
- 40. Valuation Review Reports**
- 40.1. Where the report is the result of a valuation review, the report *must* convey the following, at a minimum:
- (a) the scope of the review performed, including the elements noted in para 20.3 of IVS 101 *Scope of Work* to the extent each is applicable to the assignment,
 - (b) the valuation report being reviewed and the inputs and assumptions upon which that *valuation* was based,
 - (c) the reviewer's conclusions about the work under review, including supporting reasons, and
 - (d) the date of the report (which *may* differ from the valuation date).
- 40.2. Some of the above requirements *may* be explicitly included in a report or incorporated into a report through reference to other documents (eg, engagement letters, scope of work documents, internal policies and procedures, etc).

IVS 104 Bases of Value

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Compliance with this mandatory standard requires a *valuer* to select the appropriate *basis (or bases) of value* and follow all applicable requirements associated with that *basis of value*, whether those requirements are included as part of this standard (for IVS-defined *bases of value*) or not (for non-IVS-defined *bases of value*).

10. Introduction

- 10.1. *Bases of value* (sometimes called standards of *value*) describe the fundamental premises on which the reported *values* will be based. It is critical that the *basis (or bases) of value* be appropriate to the terms and *purpose* of the valuation assignment, as a *basis of value* may influence or dictate a *valuer's* selection of methods, inputs and assumptions, and the ultimate opinion of *value*.

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- 10.2. A *valuer* may be required to use *bases of value* that are defined by statute, regulation, private contract or other document. Such bases have to be interpreted and applied accordingly.
- 10.3. While there are many different *bases of value* used in *valuations*, most have certain common elements: an assumed transaction, an assumed date of the transaction and the assumed parties to the transaction.
- 10.4. Depending on the *basis of value*, the assumed transaction could take a number of forms:
 - (a) a hypothetical transaction,
 - (b) an actual transaction,
 - (c) a purchase (or entry) transaction,
 - (d) a sale (or exit) transaction, and/or
 - (e) a transaction in a particular or hypothetical market with specified characteristics.
- 10.5. The assumed date of a transaction will influence what information and data a *valuer* considers in a *valuation*. Most *bases of value* prohibit the consideration of information or market sentiment that would not be known or knowable with reasonable due diligence on the measurement/valuation date by *participants*.
- 10.6. Most *bases of value* reflect assumptions concerning the parties to a transaction and provide a certain level of description of the parties. In respect to these parties, they could include one or more actual or assumed characteristics, such as:
 - (a) hypothetical,
 - (b) known or specific parties,
 - (c) members of an identified/described group of potential parties,
 - (d) whether the parties are subject to particular conditions or motivations at the assumed date (eg, duress), and/or
 - (e) an assumed knowledge level.

20. Bases of Value

- 20.1. In addition to the IVS-defined *bases of value* listed below, the IVS have also provided a non-exhaustive list of other non-IVS-defined *bases of value* prescribed by individual *jurisdictional* law or those recognised and adopted by international agreement:
 - (a) IVS-defined *bases of value*:
 - 1. *Market value* (section 30),
 - 2. Market rent (section 40),
 - 3. *Equitable value* (section 50),
 - 4. *Investment value/worth* (section 60),

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5. *Synergistic value* (section 70), and
6. *Liquidation value* (section 80).

(b) Other *bases of value* (non-exhaustive list):

1. *Fair value* (International Financial Reporting Standards) (section 90),
 2. *Fair market value* (Organisation for Economic Co-operation and Development) (section 100),
 3. *Fair market value* (United States Internal Revenue Service) (section 110), and
 4. *Fair value* (Legal/Statutory) (section 120):
 - a. the Model Business Corporation Act, and
 - b. Canadian case law (Manning v Harris Steel Group Inc).
- 20.2. *Valuers must* choose the relevant *basis (or bases) of value* according to the terms and *purpose* of the valuation assignment. The *valuer's* choice of a *basis (or bases) of value* *should* consider instructions and input received from the *client* and/or its representatives. However, regardless of instructions and input provided to the *valuer*, the *valuer* *should not* use a *basis (or bases) of value* that is inappropriate for the intended *purpose* of the *valuation* (for example, if instructed to *value* for financial reporting *purposes* under IFRS, compliance with IVS *may* require the *valuer* to use a *basis of value* that is not defined or mentioned in the IVS).
- 20.3. In accordance with IVS 101 *Scope of Work*, the *basis of value* *must* be appropriate for the *purpose* and the source of the definition of any *basis of value* used *must* be cited or the basis explained.
- 20.4. *Valuers* are responsible for understanding the regulation, case law and other interpretive guidance related to all *bases of value* used.
- 20.5. The *bases of value* illustrated in sections 90-120 of this standard are defined by organisations other than the IVSC and the onus is on the *valuer* to ensure they are using the relevant definition.

30. IVS-Defined Basis of Value – Market Value

- 30.1. *Market value* is the estimated amount for which an *asset* or *liability* *should* exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.
- 30.2. The definition of *market value* *must* be applied in accordance with the following conceptual framework:
- (a) "The estimated amount" refers to a *price* expressed in terms of money payable for the *asset* in an arm's length market transaction. *Market value* is the most probable price reasonably obtainable in the market on the valuation date in keeping with the *market value* definition. It is the best price reasonably obtainable by the seller and the most advantageous price reasonably obtainable by the buyer. This estimate specifically excludes an estimated price inflated or deflated by special terms or circumstances such as atypical financing, sale and leaseback

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arrangements, special considerations or concessions granted by anyone associated with the sale, or any element of *value* available only to a specific owner or purchaser.

- (b) "An asset or liability *should exchange*" refers to the fact that the *value* of an asset or liability is an estimated amount rather than a predetermined amount or actual sale price. It is the *price* in a transaction that meets all the elements of the *market value* definition at the valuation date.
- (c) "On the valuation date" requires that the *value* is time-specific as of a given date. Because markets and market conditions *may* change, the estimated *value* *may* be incorrect or inappropriate at another time. The valuation amount will reflect the market state and circumstances as at the valuation date, not those at any other date.
- (d) "Between a willing buyer" refers to one who is motivated, but not compelled to buy. This buyer is neither over-eager nor determined to buy at any *price*. This buyer is also one who purchases in accordance with the realities of the current market and with current market expectations, rather than in relation to an imaginary or hypothetical market that cannot be demonstrated or anticipated to exist. The assumed buyer would not pay a higher *price* than the market requires. The present owner is included among those who constitute "the market".
- (e) "And a willing seller" is neither an over-eager nor a forced seller prepared to sell at any *price*, nor one prepared to hold out for a *price* not considered reasonable in the current market. The willing seller is motivated to sell the *asset* at market terms for the best *price* attainable in the open market after proper marketing, whatever that *price* *may* be. The factual circumstances of the actual owner are not a part of this consideration because the willing seller is a hypothetical owner.
- (f) "In an arm's length transaction" is one between parties who do not have a particular or special relationship, eg, parent and subsidiary companies or landlord and tenant, that *may* make the price level uncharacteristic of the market or inflated. The *market value* transaction is presumed to be between unrelated parties, each acting independently.
- (g) "After proper marketing" means that the *asset* has been exposed to the market in the most appropriate manner to effect its disposal at the best price reasonably obtainable in accordance with the *market value* definition. The method of sale is deemed to be that most appropriate to obtain the best *price* in the market to which the seller has access. The length of exposure time is not a fixed period but will vary according to the type of *asset* and market conditions. The only criterion is that there *must* have been sufficient time to allow the *asset* to be brought to the attention of an adequate number of market *participants*. The exposure period occurs prior to the valuation date.
- (h) "Where the parties had each acted knowledgeably, prudently" presumes that both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the *asset*, its actual and potential uses, and the state of the market as of the valuation date. Each is further presumed to use that knowledge prudently to seek the *price* that is most favourable for their respective positions in the transaction.

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Prudence is assessed by referring to the state of the market at the valuation date, not with the benefit of hindsight at some later date. For example, it is not necessarily imprudent for a seller to sell assets in a market with falling prices at a price that is lower than previous market levels. In such cases, as is true for other exchanges in markets with changing prices, the prudent buyer or seller will act in accordance with the best market information available at the time.

- (i) "And without compulsion" establishes that each party is motivated to undertake the transaction, but neither is forced or unduly coerced to complete it.
- 30.3. The concept of *market value* presumes a *price* negotiated in an open and competitive market where the *participants* are acting freely. The market for an *asset* could be an international market or a local market. The market could consist of numerous buyers and sellers, or could be one characterised by a limited number of market *participants*. The market in which the *asset* is presumed exposed for sale is the one in which the *asset* notionally being exchanged is normally exchanged.
- 30.4. The *market value* of an *asset* will reflect its highest and best use (see paras 140.1-140.5). The highest and best use is the use of an *asset* that maximises its potential and that is possible, legally permissible and financially feasible. The highest and best use *may* be for continuation of an *asset*'s existing use or for some alternative use. This is determined by the use that a market *participant* would have in mind for the *asset* when formulating the *price* that it would be willing to bid.
- 30.5. The nature and source of the valuation inputs *must* be consistent with the *basis of value*, which in turn *must* have regard to the valuation *purpose*. For example, various approaches and methods *may* be used to arrive at an opinion of *value* providing they use market-derived data. The market approach will, by definition, use market-derived inputs. To indicate *market value*, the income approach *should* be applied, using inputs and assumptions that would be adopted by *participants*. To indicate *market value* using the cost approach, the *cost* of an *asset* of equal utility and the appropriate depreciation *should* be determined by analysis of market-based costs and depreciation.
- 30.6. The data available and the circumstances relating to the market for the *asset* being valued *must* determine which valuation method or methods are most relevant and appropriate. If based on appropriately analysed market-derived data, each approach or method used *should* provide an indication of *market value*.
- 30.7. *Market value* does not reflect attributes of an *asset* that are of *value* to a specific owner or purchaser that are not available to other buyers in the market. Such advantages *may* relate to the physical, geographic, economic or legal characteristics of an *asset*. *Market value* requires the disregard of any such element of *value* because, at any given date, it is only assumed that there is a willing buyer, not a particular willing buyer.

*General Standards***40. IVS-Defined Basis of Value – Market Rent**

- 40.1. Market rent is the estimated amount for which an interest in real property *should* be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.
- 40.2. Market rent *may* be used as a *basis of value* when valuing a lease or an interest created by a lease. In such cases, it is necessary to consider the contract rent and, where it is different, the market rent.
- 40.3. The conceptual framework supporting the definition of *market value* shown above can be applied to assist in the interpretation of market rent. In particular, the estimated amount excludes a rent inflated or deflated by special terms, considerations or concessions. The "appropriate lease terms" are terms that would typically be agreed in the market for the type of property on the valuation date between market *participants*. An indication of market rent *should* only be provided in conjunction with an indication of the principal lease terms that have been assumed.
- 40.4. Contract rent is the rent payable under the terms of an actual lease. It *may* be fixed for the duration of the lease, or variable. The frequency and basis of calculating variations in the rent will be set out in the lease and *must* be identified and understood in order to establish the total benefits accruing to the lessor and the liability of the lessee.
- 40.5. In some circumstances the market rent *may* have to be assessed based on terms of an existing lease (eg, for rental determination purposes where the lease terms are existing and therefore not to be assumed as part of a notional lease).
- 40.6. In calculating market rent, the *valuer must* consider the following:
- (a) in regard to a market rent subject to a lease, the terms and conditions of that lease are the appropriate lease terms unless those terms and conditions are illegal or contrary to overarching legislation, and
 - (b) in regard to a market rent that is not subject to a lease, the assumed terms and conditions are the terms of a notional lease that would typically be agreed in a market for the type of property on the valuation date between market *participants*.

50. IVS-Defined Basis of Value – Equitable Value

- 50.1. *Equitable value* is the estimated price for the transfer of an *asset* or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties.
- 50.2. *Equitable value* requires the assessment of the *price* that is fair between two specific, identified parties considering the respective advantages or disadvantages that each will gain from the transaction. In contrast, *market value* requires any advantages or disadvantages that would not be available to, or incurred by, market *participants* generally to be disregarded.
- 50.3. *Equitable value* is a broader concept than *market value*. Although in many cases the *price* that is fair between two parties will equate to that obtainable in the market, there will be cases where the assessment of *equitable value*

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will involve taking into account matters that have to be disregarded in the assessment of *market value*, such as certain elements of *synergistic value* arising because of the combination of the interests.

50.4. Examples of the use of *equitable value* include:

- (a) determination of a *price* that is equitable for a shareholding in a non-quoted business, where the holdings of two specific parties *may* mean that the *price* that is equitable between them is different from the *price* that might be obtainable in the market, and
- (b) determination of a *price* that would be equitable between a lessor and a lessee for either the permanent transfer of the leased *asset* or the cancellation of the lease liability.

60. IVS-Defined Basis of Value – Investment Value/Worth

- 60.1. *Investment value* is the *value* of an *asset* to a particular owner or prospective owner for individual investment or operational objectives.
- 60.2. *Investment value* is an entity-specific *basis of value*. Although the *value* of an *asset* to the owner *may* be the same as the amount that could be realised from its sale to another party, this *basis of value* reflects the benefits received by an entity from holding the *asset* and, therefore, does not involve a presumed exchange. *Investment value* reflects the circumstances and financial objectives of the entity for which the *valuation* is being produced. It is often used for measuring investment performance.

70. IVS-Defined Basis of Value – Synergistic Value

- 70.1. *Synergistic value* is the result of a combination of two or more *assets* or interests where the combined *value* is more than the sum of the separate *values*. If the synergies are only available to one specific buyer then *synergistic value* will differ from *market value*, as the *synergistic value* will reflect particular attributes of an *asset* that are only of *value* to a specific purchaser. The added *value* above the aggregate of the respective interests is often referred to as “marriage value.”

80. IVS-Defined Basis of Value – Liquidation Value

- 80.1. *Liquidation value* is the amount that would be realised when an *asset* or group of *assets* are sold on a piecemeal basis. *Liquidation value* should take into account the *costs* of getting the *assets* into saleable condition as well as those of the disposal activity. *Liquidation value* can be determined under two different premises of *value*:

- (a) an orderly transaction with a typical marketing period (see section 160),
or
- (b) a forced transaction with a shortened marketing period (see section 170).

- 80.2. A *valuer* must disclose which premise of *value* is assumed.

90. Other Basis of Value – Fair Value (International Financial Reporting Standards)

- 90.1. IFRS 13 defines *fair value* as the *price* that would be received to sell an *asset* or paid to transfer a *liability* in an orderly transaction between market *participants* at the measurement date.

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90.2. For financial reporting *purposes*, over 130 countries require or permit the use of International Accounting Standards published by the International Accounting Standards Board. In addition, the Financial Accounting Standards Board in the United States uses the same definition of *fair value* in Topic 820.

100. Other Basis of Value – Fair Market Value (Organisation for Economic Co-operation and Development (OECD))

100.1. The OECD defines *fair market value* as the *price* a willing buyer would pay a willing seller in a transaction on the open market.

100.2. OECD guidance is used in many engagements for international tax *purposes*.

110. Other Basis of Value – Fair Market Value (United States Internal Revenue Service)

110.1. For United States tax *purposes*, Regulation §20.2031-1 states: "The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."

120. Other Basis of Value – Fair Value (Legal/Statutory) in different jurisdictions

120.1. Many national, state and local agencies use *fair value* as a *basis of value* in a legal context. The definitions can vary *significantly* and *may* be the result of legislative action or those established by courts in prior cases.

120.2. Examples of US and Canadian definitions of *fair value* are as follows:

(a) The Model Business Corporation Act (MBCA) is a model set of law prepared by the Committee on Corporate Laws of the Section of Business Law of the American Bar Association and is followed by 24 States in the United States. The definition of *fair value* from the MBCA is the *value* of the corporation's shares determined:

(1) immediately before the effectuation of the corporate action to which the shareholder objects,

(2) using customary and current valuation concepts and techniques generally employed for similar businesses in the context of the transaction requiring appraisal, and

(3) without discounting for lack of marketability or minority status except, if appropriate, for amendments to the articles pursuant to section 13.02(a)(5).

(b) In 1986, the Supreme Court of British Columbia in Canada issued a ruling in *Manning v Harris Steel Group Inc.* that stated: "Thus, a 'fair' value is one which is just and equitable. That terminology contains within itself the concept of adequate compensation (indemnity), consistent with the requirements of justice and equity."

130. Premise of Value/Assumed Use

130.1. A premise of value or assumed use describes the circumstances of how an *asset* or liability is used. Different *bases of value* *may* require a particular

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premise of value or allow the consideration of multiple premises of value. Some common premises of value are:

- (a) highest and best use,
- (b) current use/existing use,
- (c) orderly liquidation, and
- (d) forced sale.

140. Premise of Value – Highest and Best Use

- 140.1. Highest and best use is the use, from a *participant* perspective, that would produce the highest *value* for an *asset*. Although the concept is most frequently applied to non-financial *assets* as many financial *assets* do not have alternative uses, there *may* be circumstances where the highest and best use of financial *assets* needs to be considered.
- 140.2. The highest and best use *must* be physically possible (where applicable), financially feasible, legally allowed and result in the highest *value*. If different from the current use, the *costs* to convert an *asset* to its highest and best use would impact the *value*.
- 140.3. The highest and best use for an *asset* *may* be its current or existing use when it is being used optimally. However, highest and best use *may* differ from current use or even be an orderly liquidation.
- 140.4. The highest and best use of an *asset* valued on a stand-alone basis *may* be different from its highest and best use as part of a group of *assets*, when its contribution to the overall *value* of the group *must* be considered.
- 140.5. The determination of the highest and best use involves consideration of the following:
 - (a) To establish whether a use is physically possible, regard will be had to what would be considered reasonable by *participants*.
 - (b) To reflect the requirement to be legally permissible, any legal restrictions on the use of the *asset*, eg, town planning/zoning designations, need to be taken into account as well as the likelihood that these restrictions will change.
 - (c) The requirement that the use be financially feasible takes into account whether an alternative use that is physically possible and legally permissible will generate sufficient return to a typical *participant*, after taking into account the *costs* of conversion to that use, over and above the return on the existing use.

150. Premise of Value – Current Use/Existing Use

- 150.1. Current use/existing use is the current way an *asset*, liability, or group of *assets* and/or *liabilities* is used. The current use *may* be, but is not necessarily, also the highest and best use.

160. Premise of Value – Orderly Liquidation

- 160.1. An orderly liquidation describes the *value* of a group of *assets* that could be realised in a liquidation sale, given a reasonable period of time to find

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a purchaser (or purchasers), with the seller being compelled to sell on an as-is, where-is basis.

- 160.2. The reasonable period of time to find a purchaser (or purchasers) *may* vary by **asset** type and market conditions.

170. Premise of Value – Forced Sale

- 170.1. The term “forced sale” is often used in circumstances where a seller is under compulsion to sell and that, as a consequence, a proper marketing period is not possible and buyers *may* not be able to undertake adequate due diligence. The *price* that could be obtained in these circumstances will depend upon the nature of the pressure on the seller and the reasons why proper marketing cannot be undertaken. It *may* also reflect the consequences for the seller of failing to sell within the period available. Unless the nature of, and the reason for, the constraints on the seller are known, the *price* obtainable in a forced sale cannot be realistically estimated. The *price* that a seller will accept in a forced sale will reflect its particular circumstances, rather than those of the hypothetical willing seller in the *market value* definition. A “forced sale” is a description of the situation under which the exchange takes place, not a distinct *basis of value*.
- 170.2. If an indication of the *price* obtainable under forced sale circumstances is required, it will be necessary to clearly identify the reasons for the constraint on the seller, including the consequences of failing to sell in the specified period by setting out appropriate assumptions. If these circumstances do not exist at the valuation date, these *must* be clearly identified as special assumptions.
- 170.3. A forced sale typically reflects the most probable price that a specified property is likely to bring under all of the following conditions:
- (a) consummation of a sale within a short time period,
 - (b) the **asset** is subjected to market conditions prevailing as of the date of valuation or assumed timescale within which the transaction is to be completed,
 - (c) both the buyer and the seller are acting prudently and knowledgeably,
 - (d) the seller is under compulsion to sell,
 - (e) the buyer is typically motivated,
 - (f) both parties are acting in what they consider their best interests,
 - (g) a normal marketing effort is not possible due to the brief exposure time, and
 - (h) payment will be made in cash.
- 170.4. Sales in an inactive or falling market are not automatically “forced sales” simply because a seller might hope for a better price if conditions improved. Unless the seller is compelled to sell by a deadline that prevents proper marketing, the seller will be a willing seller within the definition of *market value* (see paras 30.1-30.7).
- 170.5. While confirmed “forced sale” transactions would generally be excluded from consideration in a *valuation* where the *basis of value* is *market value*, it

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can be difficult to verify that an arm's length transaction in a market was a forced sale.

180. Entity-Specific Factors

180.1. For most *bases of value*, the factors that are specific to a particular buyer or seller and not available to *participants* generally are excluded from the inputs used in a market-based valuation. Examples of entity-specific factors that *may* not be available to *participants* include:

- (a) additional *value* or reduction in *value* derived from the creation of a portfolio of similar *assets*,
- (b) unique synergies between the *asset* and other *assets* owned by the entity,
- (c) legal rights or restrictions applicable only to the entity,
- (d) tax benefits or tax burdens unique to the entity, and
- (e) an ability to exploit an *asset* that is unique to that entity.

180.2. Whether such factors are specific to the entity, or would be available to others in the market generally, is determined on a case-by-case basis. For example, an *asset* *may* not normally be transacted as a stand-alone item but as part of a group of *assets*. Any synergies with related *assets* would transfer to *participants* along with the transfer of the group and therefore are not entity specific.

180.3. If the objective of the *basis of value* used in a *valuation* is to determine the *value* to a specific owner (such as *investment value/worth* discussed in paras 60.1 and 60.2), entity-specific factors are reflected in the *valuation* of the *asset*. Situations in which the *value* to a specific owner *may* be required include the following examples:

- (a) supporting investment decisions, and
- (b) reviewing the performance of an *asset*.

190. Synergies

190.1. "Synergies" refer to the benefits associated with combining *assets*. When synergies are present, the *value* of a group of *assets* and liabilities is greater than the sum of the *values* of the individual *assets* and liabilities on a stand-alone basis. Synergies typically relate to a reduction in *costs*, and/or an increase in revenue, and/or a reduction in risk.

190.2. Whether synergies *should* be considered in a *valuation* depends on the *basis of value*. For most *bases of value*, only those synergies available to other *participants* generally will be considered (see discussion of Entity-Specific Factors in paras 180.1-180.3).

190.3. An assessment of whether synergies are available to other *participants* *may* be based on the amount of the synergies rather than a specific way to achieve that synergy.

*General Standards***200. Assumptions and Special Assumptions**

- 200.1. In addition to stating the *basis of value*, it is often necessary to make an assumption or multiple assumptions to clarify either the state of the asset in the hypothetical exchange or the circumstances under which the asset is assumed to be exchanged. Such assumptions can have a *significant* impact on *value*.
- 200.2. These types of assumptions generally fall into one of two categories:
- (a) assumed facts that are consistent with, or could be consistent with, those existing at the date of valuation, and
 - (b) assumed facts that differ from those existing at the date of valuation.
- 200.3. Assumptions related to facts that are consistent with, or could be consistent with, those existing at the date of valuation *may* be the result of a limitation on the extent of the investigations or enquiries undertaken by the *valuer*. Examples of such assumptions include, without limitation:
- (a) an assumption that a business is transferred as a complete operational entity,
 - (b) an assumption that assets employed in a business are transferred without the business, either individually or as a group,
 - (c) an assumption that an individually valued asset is transferred together with other complementary assets, and
 - (d) an assumption that a holding of shares is transferred either as a block or individually.
- 200.4. Where assumed facts differ from those existing at the date of valuation, it is referred to as a "special assumption". Special assumptions are often used to illustrate the effect of possible changes on the *value* of an asset. They are designated as "special" so as to highlight to a valuation user that the valuation conclusion is contingent upon a change in the current circumstances or that it reflects a view that would not be taken by participants generally on the valuation date. Examples of such assumptions include, without limitation:
- (a) an assumption that a property is freehold with vacant possession,
 - (b) an assumption that a proposed building had actually been completed on the valuation date,
 - (c) an assumption that a specific contract was in existence on the valuation date which had not actually been completed, and
 - (d) an assumption that a financial instrument is valued using a yield curve that is different from that which would be used by a participant.
- 200.5. All assumptions and special assumptions *must* be reasonable under the circumstances, be supported by evidence, and be relevant having regard to the purpose for which the *valuation* is required.

*International Valuation Standards***210. Transaction Costs**

- 210.1. Most *bases of value* represent the estimated exchange price of an *asset* without regard to the seller's *costs* of sale or the buyer's *costs* of purchase and without adjustment for any taxes payable by either party as a direct result of the transaction.

220. Allocation of Value

- 220.1. Allocation of value is the separate apportionment of *value* of an *asset(s)* on an individual or component basis.

- 220.2. When apportioning *value*, the allocation method must be consistent with the overall valuation premise/basis and the *valuer must*:

- (a) follow any applicable legal or regulatory requirements,
- (b) set out a clear and accurate description of the *purpose* and *intended use* of the allocation,
- (c) consider the facts and circumstances, such as the relevant characteristic(s) of the items(s) being apportioned,
- (d) adopt appropriate methodology(ies) in the circumstances.

*General Standards***IVS 105 Valuation Approaches and Methods**

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General Standards – IVS 105 Valuation Approaches and Methods**10. Introduction**

- 10.1. Consideration *must* be given to the relevant and appropriate valuation approaches. One or more valuation *approaches* *may* be used in order to arrive at the *value* in accordance with the *basis of value*. The three approaches described and defined below are the main approaches used in *valuation*. They are all based on the economic principles of price equilibrium, anticipation of benefits or substitution.
- The principal valuation approaches are:
- (a) market approach,
 - (b) income approach, and
 - (c) cost approach.
- 10.2. Each of these valuation approaches includes different, detailed methods of application.
- 10.3. The goal in selecting valuation approaches and methods for an *asset* is to find the most appropriate method under the particular circumstances. No one method is suitable in every possible situation. The selection process *should* consider, at a minimum:
- (a) the appropriate *basis(es)* of *value* and premise(s) of *value*, determined by the terms and *purpose* of the valuation assignment,
 - (b) the respective strengths and weaknesses of the possible valuation approaches and methods,
 - (c) the appropriateness of each method in view of the nature of the *asset*, and the approaches or methods used by *participants* in the relevant market, and
 - (d) the availability of reliable information needed to apply the method(s).
- 10.4. *Valuers* are not required to use more than one method for the *valuation* of an *asset*, particularly when the *valuer* has a high degree of confidence in the accuracy and reliability of a single method, given the facts and

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circumstances of the valuation engagement. However, *valuers should* consider the use of multiple approaches and methods and more than one valuation approach or method *should* be considered and *may* be used to arrive at an indication of *value*, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion. Where more than one approach and method is used, or even multiple methods within a single approach, the conclusion of *value* based on those multiple approaches and/or methods *should* be reasonable and the process of analysing and reconciling the differing *values* into a single conclusion, without averaging, *should* be described by the *valuer* in the report.

- 10.5. While this standard includes discussion of certain methods within the cost, market and income approaches, it does not provide a comprehensive list of all possible methods that *may* be appropriate. It is the *valuer's* responsibility to choose the appropriate method(s) for each valuation engagement. Compliance with IVS *may* require the *valuer* to use a method not defined or mentioned in the IVS.
- 10.6. When different approaches and/or methods result in widely divergent indications of *value*, a *valuer should* perform procedures to understand why the *value* indications differ, as it is generally not appropriate to simply *weight* two or more divergent indications of *value*. In such cases, *valuers should* reconsider the guidance in para 10.3 to determine whether one of the approaches/methods provides a better or more reliable indication of *value*.
- 10.7. *Valuers should* maximise the use of relevant observable market information in all three approaches. Regardless of the source of the inputs and assumptions used in a *valuation*, a *valuer must* perform appropriate analysis to evaluate those inputs and assumptions and their appropriateness for the valuation *purpose*.
- 10.8. Although no one approach or method is applicable in all circumstances, price information from an active market is generally considered to be the strongest evidence of *value*. Some *bases of value* *may* prohibit a *valuer* from making subjective adjustments to price information from an active market. Price information from an inactive market *may* still be good evidence of *value*, but subjective adjustments *may* be needed.
- 10.9. In certain circumstances, the *valuer* and the *client* *may* agree on the valuation approaches, methods and procedures the *valuer* will use or the extent of procedures the *valuer* will perform. Depending on the limitations placed on the *valuer* and procedures performed, such circumstances *may* result in a *valuation* that is not IVS compliant.
- 10.10. A *valuation* *may* be limited or restricted where the *valuer* is not able to employ the valuation approaches, methods and procedures that a reasonable and informed third party would perform, and it is reasonable to expect that the effect of the limitation or restriction on the estimate of *value* could be *material*.

20. Market Approach

- 20.1. The market approach provides an indication of *value* by comparing the asset with identical or comparable (that is similar) assets for which price information is available.

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- 20.2. The market approach *should* be applied and afforded *significant weight* under the following circumstances:
- (a) the subject asset has recently been sold in a transaction appropriate for consideration under the *basis of value*,
 - (b) the subject asset or substantially similar assets are actively publicly traded, and/or
 - (c) there are frequent and/or recent observable transactions in substantially similar assets.
- 20.3. Although the above circumstances would indicate that the market approach *should* be applied and afforded *significant weight*, when the above criteria are not met, the following are additional circumstances where the market approach *may* be applied and afforded *significant weight*. When using the market approach under the following circumstances, a *valuer* *should* consider whether any other approaches can be applied and *weighted* to corroborate the *value* indication from the market approach:
- (a) Transactions involving the subject asset or substantially similar assets are not recent enough considering the levels of volatility and activity in the market.
 - (b) The asset or substantially similar assets are publicly traded, but not actively.
 - (c) Information on market transactions is available, but the comparable assets have *significant* differences to the subject asset, potentially requiring subjective adjustments.
 - (d) Information on recent transactions is not reliable (ie, hearsay, missing information, synergistic purchaser, not arm's-length, distressed sale, etc).
 - (e) The critical element affecting the *value* of the asset is the *price* it would achieve in the market rather than the *cost* of reproduction or its income-producing ability.
- 20.4. The heterogeneous nature of many assets means that it is often not possible to find market evidence of transactions involving identical or similar assets. Even in circumstances where the market approach is not used, the use of market-based inputs *should* be maximised in the application of other approaches (eg, market-based valuation metrics such as effective yields and rates of return).
- 20.5. When comparable market information does not relate to the exact or substantially the same asset, the *valuer* *must* perform a comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset. It will often be necessary to make adjustments based on this comparative analysis. Those adjustments *must* be reasonable and *valuers* *must* document the reasons for the adjustments and how they were quantified.
- 20.6. The market approach often uses market multiples derived from a set of comparables, each with different multiples. The selection of the appropriate multiple within the range requires judgement, considering qualitative and quantitative factors.

30. Market Approach Methods

Comparable Transactions Method

- 30.1. The comparable transactions method, also known as the guideline transactions method, utilises information on transactions involving *assets* that are the same or similar to the subject *asset* to arrive at an indication of *value*.
- 30.2. When the comparable transactions considered involve the subject *asset*, this method is sometimes referred to as the prior transactions method.
- 30.3. If few recent transactions have occurred, the *valuer* *may* consider the *prices* of identical or similar *assets* that are listed or offered for sale, provided the relevance of this information is clearly established, critically analysed and documented. This is sometimes referred to as the comparable listings method and *should* not be used as the sole indication of *value* but can be appropriate for consideration together with other methods. When considering listings or offers to buy or sell, the *weight* afforded to the listings/offer price *should* consider the level of commitment inherent in the *price* and how long the listing/offer has been on the market. For example, an offer that represents a binding commitment to purchase or sell an *asset* at a given price *may* be given more *weight* than a quoted price without such a binding commitment.
- 30.4. The comparable transaction method can use a variety of different comparable evidence, also known as units of comparison, which form the basis of the comparison. For example, a few of the many common units of comparison used for real property interests include price per square foot (or per square metre), rent per square foot (or per square metre) and capitalisation rates. A few of the many common units of comparison used in business valuation include EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) multiples, earnings multiples, revenue multiples and book value multiples. A few of the many common units of comparison used in financial instrument valuation include metrics such as yields and interest rate spreads. The units of comparison used by *participants* can differ between *asset* classes and across industries and geographies.
- 30.5. A subset of the comparable transactions method is matrix pricing, which is principally used to value some types of financial instruments, such as debt securities, without relying exclusively on quoted prices for the specific securities, but rather relying on the securities' relationship to other benchmark quoted securities and their attributes (ie, yield).
- 30.6. The key steps in the comparable transactions method are:
 - (a) identify the units of comparison that are used by *participants* in the relevant market,
 - (b) identify the relevant comparable transactions and calculate the key valuation metrics for those transactions,
 - (c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the comparable *assets* and the subject *asset*,

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- (d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject *asset* and the comparable *assets* (see para 30.12(d)),
 - (e) apply the adjusted valuation metrics to the subject *asset*, and
 - (f) if multiple valuation metrics were used, reconcile the indications of *value*.
- 30.7. A *valuer* should choose comparable transactions within the following context:
- (a) evidence of several transactions is generally preferable to a single transaction or event,
 - (b) evidence from transactions of very similar *assets* (ideally identical) provides a better indication of *value* than *assets* where the transaction prices require *significant* adjustments,
 - (c) transactions that happen closer to the valuation date are more representative of the market at that date than older/dated transactions, particularly in volatile markets,
 - (d) for most *bases of value*, the transactions *should* be “arm’s length” between unrelated parties,
 - (e) sufficient information on the transaction *should* be available to allow the *valuer* to develop a reasonable understanding of the comparable *asset* and assess the valuation metrics/comparable evidence,
 - (f) information on the comparable transactions *should* be from a reliable and trusted source, and
 - (g) actual transactions provide better valuation evidence than intended transactions.
- 30.8. A *valuer* should analyse and make adjustments for any material differences between the comparable transactions and the subject *asset*. Examples of common differences that could warrant adjustments *may* include, but are not limited to:
- (a) material characteristics (age, size, specifications, etc),
 - (b) relevant restrictions on either the subject *asset* or the comparable *assets*,
 - (c) geographical location (location of the *asset* and/or location of where the *asset* is likely to be transacted/used) and the related economic and regulatory environments,
 - (d) profitability or profit-making capability of the *assets*,
 - (e) historical and expected growth,
 - (f) yields/coupon rates,
 - (g) types of collateral,
 - (h) unusual terms in the comparable transactions,

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- (i) differences related to marketability and control characteristics of the comparable and the subject asset, and
- (j) ownership characteristics (eg, legal form of ownership, amount percentage held).

Guideline publicly-traded comparable method

- 30.9. The guideline publicly-traded method utilises information on publicly-traded comparables that are the same or similar to the subject asset to arrive at an indication of value.
- 30.10. This method is similar to the comparable transactions method. However, there are several differences due to the comparables being publicly traded, as follows:
- (a) the valuation metrics/comparable evidence are available as of the valuation date,
 - (b) detailed information on the comparables are readily available in public filings, and
 - (c) the information contained in public filings is prepared under well-understood accounting standards.
- 30.11. The method *should* be used only when the subject asset is sufficiently similar to the publicly-traded comparables to allow for meaningful comparison.
- 30.12. The key steps in the guideline publicly-traded comparable method are to:
- (a) identify the valuation metrics/comparable evidence that are used by participants in the relevant market,
 - (b) identify the relevant guideline publicly-traded comparables and calculate the key valuation metrics for those transactions,
 - (c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the publicly-traded comparables and the subject asset,
 - (d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the publicly-traded comparables,
 - (e) apply the adjusted valuation metrics to the subject asset, and
 - (f) if multiple valuation metrics were used, weight the indications of value.
- 30.13. A *valuer* *should* choose publicly-traded comparables within the following context:
- (a) consideration of multiple publicly-traded comparables is preferred to the use of a single comparable,
 - (b) evidence from similar publicly-traded comparables (for example, with similar market segment, geographic area, size in revenue and/or assets, growth rates, profit margins, leverage, liquidity and diversification)

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provides a better indication of *value* than comparables that require *significant* adjustments, and

- (c) securities that are actively traded provide more meaningful evidence than thinly-traded securities.
- 30.14. A *valuer* should analyse and make adjustments for any material differences between the guideline publicly-traded comparables and the subject *asset*. Examples of common differences that could warrant adjustments *may* include, but are not limited to:
- (a) material characteristics (age, size, specifications, etc),
 - (b) relevant discounts and premiums (see para 30.17),
 - (c) relevant restrictions on either the subject *asset* or the comparable *assets*,
 - (d) geographical location of the underlying company and the related economic and regulatory environments,
 - (e) profitability or profit-making capability of the *assets*,
 - (f) historical and expected growth,
 - (g) differences related to marketability and control characteristics of the comparable and the subject *asset*, and
 - (h) type of ownership.

Other Market Approach Considerations

- 30.15. The following paragraphs address a non-exhaustive list of certain special considerations that *may* form part of a market approach valuation.
- 30.16. Anecdotal or “rule-of-thumb” valuation benchmarks are sometimes considered to be a market approach. However, value indications derived from the use of such rules *should* not be given substantial *weight* unless it can be shown that buyers and sellers place *significant* reliance on them.
- 30.17. In the market approach, the fundamental basis for making adjustments is to adjust for differences between the subject *asset* and the guideline transactions or publicly-traded securities. Some of the most common adjustments made in the market approach are known as discounts and premiums.
- (a) Discounts for Lack of Marketability (DLOM) *should* be applied when the comparables are deemed to have superior marketability to the subject *asset*. A DLOM reflects the concept that when comparing otherwise identical *assets*, a readily marketable *asset* would have a higher *value* than an *asset* with a long marketing period or restrictions on the ability to sell the *asset*. For example, publicly-traded securities can be bought and sold nearly instantaneously while shares in a private company *may* require a *significant* amount of time to identify potential buyers and complete a transaction. Many *bases of value* allow the consideration of restrictions on marketability that are inherent in the

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subject asset but prohibit consideration of marketability restrictions that are specific to a particular owner. DLOMs *may* be quantified using any reasonable method, but are typically calculated using option pricing models, studies that compare the *value* of publicly-traded shares and restricted shares in the same company, or studies that compare the *value* of shares in a company before and after an initial public offering.

(b) Control Premiums (sometimes referred to as *Market Participant Acquisition Premiums* or *MPAPs*) and Discounts for Lack of Control (DLOC) are applied to reflect differences between the comparables and the subject asset with regard to the ability to make decisions and the changes that can be made as a result of exercising control. All else being equal, *participants* would generally prefer to have control over a subject asset than not. However, *participants'* willingness to pay a Control Premium or DLOC will generally be a factor of whether the ability to exercise control enhances the economic benefits available to the owner of the subject asset. Control Premiums and DLOCs *may* be quantified using any reasonable method, but are typically calculated based on either an analysis of the specific cash flow enhancements or reductions in risk associated with control or by comparing observed prices paid for controlling interests in publicly-traded securities to the publicly-traded price before such a transaction is announced. Examples of circumstances where Control Premiums and DLOC *should* be considered include where:

1. shares of public companies generally do not have the ability to make decisions related to the operations of the company (they lack control). As such, when applying the guideline public comparable method to value a subject asset that reflects a controlling interest, a control premium *may* be appropriate, or
2. the guideline transactions in the guideline transaction method often reflect transactions of controlling interests. When using that method to value a subject asset that reflects a minority interest, a DLOC *may* be appropriate.

(c) Blockage discounts are sometimes applied when the subject asset represents a large block of shares in a publicly-traded security such that an owner would not be able to quickly sell the block in the public market without negatively influencing the publicly-traded price. Blockage discounts *may* be quantified using any reasonable method but typically a model is used that considers the length of time over which a *participant* could sell the subject shares without negatively impacting the publicly-traded price (ie, selling a relatively small portion of the security's typical daily trading volume each day). Under certain *bases of value*, particularly *fair value* for financial reporting purposes, blockage discounts are prohibited.

40. Income Approach

- 40.1. The income approach provides an indication of *value* by converting future cash flow to a single current value. Under the income approach, the *value* of an *asset* is determined by reference to the *value* of income, cash flow or cost savings generated by the *asset*.

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- 40.2. The income approach *should* be applied and afforded *significant weight* under the following circumstances:
- (a) the income-producing ability of the *asset* is the critical element affecting *value* from a *participant* perspective, and/or
 - (b) reasonable projections of the amount and timing of future income are available for the subject *asset*, but there are few, if any, relevant market comparables.
- 40.3. Although the above circumstances would indicate that the income approach *should* be applied and afforded *significant weight*, the following are additional circumstances where the income approach *may* be applied and afforded *significant weight*. When using the income approach under the following circumstances, a *valuer* *should* consider whether any other approaches can be applied and *weighted* to corroborate the value indication from the income approach:
- (a) the income-producing ability of the subject *asset* is only one of several factors affecting *value* from a *participant* perspective,
 - (b) there is *significant* uncertainty regarding the amount and timing of future income-related to the subject *asset*,
 - (c) there is a lack of access to information related to the subject *asset* (for example, a minority owner *may* have access to historical financial statements but not forecasts/budgets), and/or
 - (d) the subject *asset* has not yet begun generating income, but is projected to do so.
- 40.4. A fundamental basis for the income approach is that investors expect to receive a return on their investments and that such a return *should* reflect the perceived level of risk in the investment.
- 40.5. Generally, investors can only expect to be compensated for systematic risk (also known as “market risk” or “undiversifiable risk”).

50. Income Approach Methods

- 50.1. Although there are many ways to implement the income approach, methods under the income approach are effectively based on discounting future amounts of cash flow to present value. They are variations of the Discounted Cash Flow (DCF) method and the concepts below apply in part or in full to all income approach methods.

Discounted Cash Flow (DCF) Method

- 50.2. Under the DCF method the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the *asset*.
- 50.3. In some circumstances for long-lived or indefinite-lived *assets*, DCF *may* include a terminal value which represents the *value* of the *asset* at the end of the explicit projection period. In other circumstances, the *value* of an *asset* *may* be calculated solely using a terminal value with no explicit projection period. This is sometimes referred to as an income capitalisation method.

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50.4. The key steps in the DCF method are:

- (a) choose the most appropriate type of cash flow for the nature of the subject asset and the assignment (ie, pre-tax or post-tax, total cash flows or cash flows to equity, real or nominal, etc),
- (b) determine the most appropriate explicit period, if any, over which the cash flow will be forecast,
- (c) prepare cash flow forecasts for that period,
- (d) determine whether a terminal value is appropriate for the subject asset at the end of the explicit forecast period (if any) and then determine the appropriate terminal value for the nature of the asset,
- (e) determine the appropriate *discount rate*, and
- (f) apply the *discount rate* to the forecasted future cash flow, including the terminal value, if any.

Type of Cash Flow

50.5. When selecting the appropriate type of cash flow for the nature of asset or assignment, *valuers must* consider the factors below. In addition, the *discount rate* and other inputs *must* be consistent with the type of cash flow chosen.

- (a) Cash flow to whole asset or partial interest: Typically cash flow to the whole asset is used. However, occasionally other levels of income may be used as well, such as cash flow to equity (after payment of interest and principle on debt) or dividends (only the cash flow distributed to equity owners). Cash flow to the whole asset is most commonly used because an asset should theoretically have a single value that is independent of how it is financed or whether income is paid as dividends or reinvested.
- (b) The cash flow can be pre-tax or post-tax: The tax rate applied should be consistent with the *basis of value* and in many instances would be a participant tax rate rather than an owner-specific one.
- (c) Nominal versus real: Real cash flow does not consider inflation whereas nominal cash flows include expectations regarding inflation. If expected cash flow incorporates an expected inflation rate, the *discount rate* has to include an adjustment for inflation as well.
- (d) Currency: The choice of currency used may have an impact on assumptions related to inflation and risk. This is particularly true in emerging markets or in currencies with high inflation rates. The currency in which the forecast is prepared and related risks are separate and distinct from risks associated with the country(ies) in which the asset resides or operates.
- (e) The type of cash flow contained in the forecast: For example, a cash flow forecast may represent expected cash flows, ie, probability-weighted scenarios, most likely cash flows, contractual cash flows, etc

50.6. The type of cash flow chosen should be in accordance with *participant's* viewpoints. For example, cash flows and *discount rates* for real property

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are customarily developed on a pre-tax basis while cash flows and *discount rates* for businesses are normally developed on a post-tax basis. Adjusting between pre-tax and post-tax rates can be complex and prone to error and *should* be approached with caution.

- 50.7. When a *valuation* is being developed in a currency (“the valuation currency”) that differs from the currency used in the cash flow projections (“the functional currency”), a *valuer* *should* use one of the following two currency translation methods:
 - (a) Discount the cash flows in the functional currency using a *discount rate* appropriate for that functional currency. Convert the present value of the cash flows to the valuation currency at the spot rate on the valuation date.
 - (b) Use a currency exchange forward curve to translate the functional currency projections into valuation currency projections and discount the projections using a *discount rate* appropriate for the valuation currency. When a reliable currency exchange forward curve is not available (for example, due to lack of liquidity in the relevant currency exchange markets), it *may* not be possible to use this method and only the method described in para 50.7(a) can be applied.

Explicit Forecast Period

- 50.8. The selection criteria will depend upon the *purpose of the valuation*, the nature of the *asset*, the information available and the required *bases of value*. For an *asset* with a short life, it is more likely to be both possible and relevant to project cash flow over its entire life.
- 50.9. *Valuers* *should* consider the following factors when selecting the explicit forecast period:
 - (a) the life of the *asset*,
 - (b) a reasonable period for which reliable data is available on which to base the projections,
 - (c) the minimum explicit forecast period which *should* be sufficient for an *asset* to achieve a stabilised level of growth and profits, after which a terminal value can be used,
 - (d) in the *valuation* of cyclical *assets*, the explicit forecast period *should* generally include an entire cycle, when possible, and
 - (e) for finite-lived *assets* such as most financial instruments, the cash flows will typically be forecast over the full life of the *asset*.
- 50.10. In some instances, particularly when the *asset* is operating at a stabilised level of growth and profits at the valuation date, it *may* not be necessary to consider an explicit forecast period and a terminal value *may* form the only basis for value (sometimes referred to as an income capitalisation method).
- 50.11. The intended holding period for one investor *should* not be the only consideration in selecting an explicit forecast period and *should* not impact the *value* of an *asset*. However, the period over which an *asset* is intended to be held *may* be considered in determining the explicit forecast period if the objective of the *valuation* is to determine its *investment value*.

Cash Flow Forecasts

- 50.12. Cash flow for the explicit forecast period is constructed using prospective financial information (PFI) (projected income/inflows and expenditure/outflows).
- 50.13. As required by para 50.12, regardless of the source of the PFI (eg, management forecast), a *valuer must* perform analysis to evaluate the PFI, the assumptions underlying the PFI and their appropriateness for the valuation *purpose*. The suitability of the PFI and the underlying assumptions will depend upon the *purpose* and the required *bases of value*. For example, cash flow used to determine *market value* should reflect PFI that would be anticipated by *participants*; in contrast, *investment value* can be measured using cash flow that is based on the reasonable forecasts from the perspective of a particular investor.
- 50.14. The cash flow is divided into suitable periodic intervals (eg, weekly, monthly, quarterly or annually) with the choice of interval depending upon the nature of the *asset*, the pattern of the cash flow, the data available, and the length of the forecast period.
- 50.15. The projected cash flow should capture the amount and timing of all future cash inflows and outflows associated with the subject *asset* from the perspective appropriate to the *basis of value*.
- 50.16. Typically, the projected cash flow will reflect one of the following:
 - (a) contractual or promised cash flow,
 - (b) the single most likely set of cash flow,
 - (c) the probability-weighted expected cash flow, or
 - (d) multiple scenarios of possible future cash flow.
- 50.17. Different types of cash flow often reflect different levels of risk and may require different *discount rates*. For example, probability-weighted expected cash flows incorporate expectations regarding all possible outcomes and are not dependent on any particular conditions or events (note that when a probability-weighted expected cash flow is used, it is not always necessary for *valuers* to take into account distributions of all possible cash flows using complex models and techniques. Rather, *valuers may* develop a limited number of discrete scenarios and probabilities that capture the array of possible cash flows). A single most likely set of cash flows may be conditional on certain future events and therefore could reflect different risks and warrant a different *discount rate*.
- 50.18. While *valuers* often receive PFI that reflects accounting income and expenses, it is generally preferable to use cash flow that would be anticipated by *participants* as the basis for *valuations*. For example, accounting non-cash expenses, such as depreciation and amortisation, should be added back, and expected cash outflows relating to capital expenditures or to changes in working capital should be deducted in calculating cash flow.
- 50.19. *Valuers must* ensure that seasonality and cyclicity in the subject has been appropriately considered in the cash flow forecasts.

*General Standards****Terminal Value***

50.20. Where the *asset* is expected to continue beyond the explicit forecast period, *valuers must* estimate the *value* of the *asset* at the end of that period. The terminal value is then discounted back to the valuation date, normally using the same *discount rate* as applied to the forecast cash flow.

50.21. The terminal value *should* consider:

- (a) whether the *asset* is deteriorating/finite-lived in nature or indefinite-lived, as this will influence the method used to calculate a terminal value,
- (b) whether there is future growth potential for the *asset* beyond the explicit forecast period,
- (c) whether there is a pre-determined fixed capital amount expected to be received at the end of the explicit forecast period,
- (d) the expected risk level of the *asset* at the time the terminal value is calculated,
- (e) for cyclical assets, the terminal value *should* consider the cyclical nature of the *asset* and *should* not be performed in a way that assumes “peak” or “trough” levels of cash flows in perpetuity, and
- (f) the tax attributes inherent in the *asset* at the end of the explicit forecast period (if any) and whether those tax attributes would be expected to continue into perpetuity.

50.22. *Valuers may* apply any reasonable method for calculating a terminal value. While there are many different approaches to calculating a terminal value, the three most commonly used methods for calculating a terminal value are:

- (a) Gordon growth model/constant growth model (appropriate only for indefinite-lived assets),
- (b) market approach/exit value (appropriate for both deteriorating/finite-lived assets and indefinite-lived assets), and
- (c) salvage value/disposal cost (appropriate only for deteriorating/finite-lived assets).

Gordon Growth Model/Constant Growth Model

50.23. The constant growth model assumes that the *asset* grows (or declines) at a constant rate into perpetuity.

Market Approach/Exit Value

50.24. The market approach/exit value method can be performed in a number of ways, but the ultimate goal is to calculate the *value* of the *asset* at the end of the explicit cash flow forecast.

50.25. Common ways to calculate the terminal value under this method include application of a market-evidence based capitalisation factor or a market multiple.

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50.26. When a market approach/exit value is used, *valuers should* comply with the requirements in the market approach and market approach methods section of this standard (sections 20 and 30). However, *valuers should* also consider the expected market conditions at the end of the explicit forecast period and make adjustments accordingly.

Salvage Value/Disposal Cost

50.27. The terminal value of some *assets may* have little or no relationship to the preceding cash flow. Examples of such *assets* include wasting *assets* such as a mine or an oil well.

50.28. In such cases, the terminal value is typically calculated as the salvage value of the *asset*, less *costs* to dispose of the *asset*. In circumstances where the *costs* exceed the salvage value, the terminal value is negative and referred to as a disposal cost or an *asset* retirement obligation.

Discount Rate

50.29. The rate at which the forecast cash flow is discounted *should* reflect not only the time value of money, but also the risks associated with the type of cash flow and the future operations of the *asset*.

50.30. The *discount rate must* be consistent with the type of cash flow.

50.31. *Valuers may* use any reasonable method for developing an appropriate *discount rate*. While there are many methods for developing a *discount rate* or determining the reasonableness of a *discount rate*, a non-exhaustive list of common methods includes:

- (a) a capital asset pricing model (CAPM),
- (b) a *weighted average cost of capital* (WACC),
- (c) observed or inferred rates/yields,
- (d) a build-up method.

50.32. *Valuers should* consider corroborative analyses when assessing the appropriateness of a *discount rate*. A non-exhaustive list of common analyses *should* include:

- (a) an internal rate of return (IRR),
- (b) a *weighted average return on assets* (WARA),
- (c) *value* indications from other approaches, such as market approach, or comparing implied multiples from the income approach with guideline company market multiples or transaction multiples.

50.33. In developing a *discount rate*, a *valuer should* consider:

- (a) the type of *asset* being valued. For example, *discount rates* used in valuing debt would be different to those used when valuing real property or a business,
- (b) the rates implicit in comparable transactions in the market,

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- (c) the geographic location of the *asset* and/or the location of the markets in which it would trade,
- (d) the life/term and/or maturity of the *asset* and the consistency of inputs. For example, the maturity of the risk-free rate applied will depend on the circumstances, but a common approach is to match the maturity of the risk-free rate to the time horizon of the cash flows being considered,
- (e) the *bases of value* being applied,
- (f) the currency denomination of the projected cash flows.

50.34. In developing a *discount rate*, the *valuer must*:

- (a) document the method used for developing the *discount rate* and support its use,
- (b) provide evidence for the derivation of the *discount rate*, including the identification of the significant inputs and support for their derivation or source.

50.35. *Valuers must* consider the *purpose* for which the forecast was prepared and whether the forecast assumptions are consistent with the *basis of value* being applied. If the forecast assumptions are not consistent with the *basis of value*, it could be necessary to adjust the forecast or *discount rate* (see para 50.38).

50.36. *Valuers must* consider the risk of achieving the forecast cash flow of the *asset* when developing the *discount rate*. Specifically, the *valuer must* evaluate whether the risk underlying the forecast cash flow assumptions are captured in the *discount rate*.

50.37. While there are many ways to assess the risk of achieving the forecast cash flow, a non-exhaustive list of common procedures includes:

- (a) Identify the key components of the forecast cash flow and compare the forecast cash flow key components to:
 - Historical operating and financial performance of the *asset*,
 - Historical and expected performance of comparable *assets*,
 - Historical and expected performance for the industry, and
 - Expected near-term and long-term growth rates of the country or region in which the *asset* primarily operates,
- (b) Confirm whether the forecast cash flow represents expected cash flows (ie, probability-weighted scenarios), as opposed to most likely cash flows (ie, most probable scenario), of the *asset*, or some other type of cash flow,
- (c) If utilising expected cash flows, consider the relative dispersion of potential outcomes used to derive the expected cash flows (eg, higher dispersion *may* indicate a need for an adjustment to the *discount rate*),
- (d) Compare prior forecasts of the *asset* to actual results to assess the accuracy and reliability of managements' estimates,
- (e) Consider qualitative factors, and

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- (f) Consider the value indications such as those resulting from the market approach.
- 50.38. If the *valuer* determines that certain risks included in the forecast cash flow for the *asset* have not been captured in the *discount rate*, the *valuer must* 1) adjust the forecast, or 2) adjust the *discount rate* to account for those risks not already captured.
- (a) When adjusting the cash flow forecast, the *valuer should* provide the rationale for why the adjustments were necessary, undertake quantitative procedures to support the adjustments, and document the nature and amount of the adjustments,
 - (b) When adjusting the *discount rate*, the *valuer should* document why it was not appropriate or possible to adjust the cash flow forecast, provide the rationale for why such risks are not otherwise captured in the *discount rate*, undertake quantitative and qualitative procedures to support the adjustments, and document the nature and amount of the adjustment. The use of quantitative procedures does not necessarily entail quantitative derivation of the adjustment to the *discount rate*. A *valuer* need not conduct an exhaustive quantitative process but *should* take into account all the information that is reasonably available.
- 50.39. In developing a *discount rate*, it *may* be appropriate to consider the impact the *asset's* unit of account has on unsystematic risks and the derivation of the overall *discount rate*. For example, the *valuer should* consider whether market *participants* would assess the *discount rate* for the *asset* on a standalone basis, or whether market *participants* would assess the *asset* in the context of a broader portfolio and therefore consider the potential diversification of unsystematic risks.
- 50.40. A *valuer should* consider the impact of intercompany arrangements and transfer pricing on the *discount rate*. For example, it is not uncommon for intercompany arrangements to specify fixed or guaranteed returns for some businesses or entities within a larger enterprise, which would lower the risk of the entity forecasted cash flows and reduce the appropriate *discount rate*. However other businesses or entities within the enterprise are deemed to be residual earners in which both excess return and risk are allocated, thereby increasing the risk of the entity forecasted cash flows and the appropriate *discount rate*.

60. Cost Approach

- 60.1. The cost approach provides an indication of *value* using the economic principle that a buyer will pay no more for an *asset* than the *cost* to obtain an *asset* of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of *value* by calculating the current replacement or reproduction cost of an *asset* and making deductions for physical deterioration and all other relevant forms of obsolescence.
- 60.2. The cost approach *should* be applied and afforded *significant weight* under the following circumstances:
- (a) *participants* would be able to recreate an *asset* with substantially the same utility as the subject *asset*, without regulatory or legal restrictions, and the *asset* could be recreated quickly enough that a

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participant would not be willing to pay a *significant* premium for the ability to use the subject *asset* immediately,

- (b) the *asset* is not directly income-generating and the unique nature of the *asset* makes using an income approach or market approach unfeasible, and/or
 - (c) the *basis of value* being used is fundamentally based on replacement cost, such as replacement value.
- 60.3. Although the circumstances in para 60.2 would indicate that the cost approach *should* be applied and afforded *significant weight*, the following are additional circumstances where the cost approach *may* be applied and afforded *significant weight*. When using the cost approach under the following circumstances, a *valuer* *should* consider whether any other approaches can be applied and *weighted* to corroborate the value indication from the cost approach:
- (a) *participants* might consider recreating an *asset* of similar utility, but there are potential legal or regulatory hurdles or *significant* time involved in recreating the *asset*,
 - (b) when the cost approach is being used as a reasonableness check to other approaches (for example, using the cost approach to confirm whether a business valued as a going-concern might be more valuable on a liquidation basis), and/or
 - (c) the *asset* was recently created, such that there is a high degree of reliability in the assumptions used in the cost approach.
- 60.4. The *value* of a partially completed *asset* will generally reflect the *costs* incurred to date in the creation of the *asset* (and whether those *costs* contributed to *value*) and the expectations of *participants* regarding the *value* of the property when complete, but consider the *costs* and time required to complete the *asset* and appropriate adjustments for profit and risk.

70. Cost Approach Methods

- 70.1. Broadly, there are three cost approach methods:
- (a) replacement cost method: a method that indicates *value* by calculating the *cost* of a similar *asset* offering equivalent utility,
 - (b) reproduction cost method: a method under the *cost* that indicates *value* by calculating the *cost* to recreating a replica of an *asset*, and
 - (c) summation method: a method that calculates the *value* of an *asset* by the addition of the separate *values* of its component parts.

Replacement Cost Method

- 70.2. Generally, replacement cost is the *cost* that is relevant to determining the *price* that a *participant* would pay as it is based on replicating the utility of the *asset*, not the exact physical properties of the *asset*.
- 70.3. Usually replacement cost is adjusted for physical deterioration and all relevant forms of obsolescence. After such adjustments, this can be referred to as depreciated replacement cost.

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- 70.4. The key steps in the replacement cost method are:
- (a) calculate all of the *costs* that would be incurred by a typical *participant* seeking to create or obtain an *asset* providing equivalent utility,
 - (b) determine whether there is any depreciation related to physical, functional and external obsolescence associated with the subject *asset*, and
 - (c) deduct total depreciation from the total *costs* to arrive at a *value* for the subject *asset*.
- 70.5. The replacement cost is generally that of a modern equivalent *asset*, which is one that provides similar function and equivalent utility to the *asset* being valued, but which is of a current design and constructed or made using current cost-effective materials and techniques.
- Reproduction Cost Method***
- 70.6. Reproduction cost is appropriate in circumstances such as the following:
- (a) the *cost* of a modern equivalent *asset* is greater than the *cost* of recreating a replica of the subject *asset*, or
 - (b) the utility offered by the subject *asset* could only be provided by a replica rather than a modern equivalent.
- 70.7. The key steps in the reproduction cost method are:
- (a) calculate all of the *costs* that would be incurred by a typical *participant* seeking to create an exact replica of the subject *asset*,
 - (b) determine whether there is any depreciation related to physical, functional and external obsolescence associated with the subject *asset*, and
 - (c) deduct total depreciation from the total *costs* to arrive at a *value* for the subject *asset*.
- Summation Method***
- 70.8. The summation method, also referred to as the underlying *asset* method, is typically used for investment companies or other types of *assets* or entities for which *value* is primarily a factor of the *values* of their holdings.
- 70.9. The key steps in the summation method are:
- (a) value each of the component *assets* that are part of the subject *asset* using the appropriate valuation approaches and methods, and
 - (b) add the *value* of the component *assets* together to reach the *value* of the subject *asset*.
- Cost Considerations***
- 70.10. The cost approach *should* capture all of the *costs* that would be incurred by a typical *participant*.
- 70.11. The cost elements *may* differ depending on the type of the *asset* and *should* include the direct and indirect costs that would be required to replace/

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recreate the *asset* as of the valuation date. Some common items to consider include:

(a) direct costs:

1. materials, and
2. labour.

(b) indirect costs:

1. transport costs,
2. installation costs,
3. professional fees (design, permit, architectural, legal, etc),
4. other fees (commissions, etc),
5. overheads,
6. taxes,
7. finance costs (eg, interest on debt financing), and
8. profit margin/entrepreneurial profit to the creator of the *asset* (eg, return to investors).

70.12. An *asset* acquired from a third party would presumably reflect their *costs* associated with creating the *asset* as well as some form of profit margin to provide a return on their investment. As such, under *bases of value* that assume a hypothetical transaction, it *may* be appropriate to include an assumed profit margin on certain *costs* which can be expressed as a target profit, either a lump sum or a percentage return on *cost* or *value*. However, financing costs, if included, *may* already reflect *participants'* required return on capital deployed, so *valuers should* be cautious when including both financing costs and profit margins.

70.13. When *costs* are derived from actual, quoted or estimated prices by third party suppliers or contractors, these *costs* will already include a third parties' desired level of profit.

70.14. The actual *costs* incurred in creating the subject *asset* (or a comparable reference *asset*) *may* be available and provide a relevant indicator of the *cost* of the *asset*. However, adjustments *may* need to be made to reflect the following:

- (a) cost fluctuations between the date on which this *cost* was incurred and the valuation date, and
- (b) any atypical or exceptional *costs*, or savings, that are reflected in the *cost* data but that would not arise in creating an equivalent.

80. Depreciation/Obssolescence

80.1. In the context of the cost approach, "depreciation" refers to adjustments made to the estimated *cost* of creating an *asset* of equal utility to reflect the impact on *value* of any obsolescence affecting the subject *asset*. This meaning is different from the use of the word in financial reporting or tax law where it generally refers to a method for systematically expensing capital expenditure over time.

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- 80.2. Depreciation adjustments are normally considered for the following types of obsolescence, which *may* be further divided into subcategories when making adjustments:
- (a) Physical obsolescence: Any loss of utility due to the physical deterioration of the asset or its components resulting from its age and usage.
 - (b) Functional obsolescence: Any loss of utility resulting from inefficiencies in the subject asset compared to its replacement such as its design, specification or technology being outdated.
 - (c) External or economic obsolescence: Any loss of utility caused by economic or locational factors external to the asset. This type of obsolescence can be temporary or permanent.
- 80.3. Depreciation/obsolescence *should* consider the physical and economic lives of the asset:
- (a) The physical life is how long the asset could be used before it would be worn out or beyond economic repair, assuming routine maintenance but disregarding any potential for refurbishment or reconstruction.
 - (b) The economic life is how long it is anticipated that the asset could generate financial returns or provide a non-financial benefit in its current use. It will be influenced by the degree of functional or economic obsolescence to which the asset is exposed.
- 80.4. Except for some types of economic or external obsolescence, most types of obsolescence are measured by making comparisons between the subject asset and the hypothetical asset on which the estimated replacement or reproduction cost is based. However, when market evidence of the effect of obsolescence on value is available, that evidence *should* be considered.
- 80.5. Physical obsolescence can be measured in two different ways:
- (a) curable physical obsolescence, ie, the cost to fix/cure the obsolescence, or
 - (b) incurable physical obsolescence which considers the asset's age, expected total and remaining life where the adjustment for physical obsolescence is equivalent to the proportion of the expected total life consumed. Total expected life *may* be expressed in any reasonable way, including expected life in years, mileage, units produced, etc
- 80.6. There are two forms of functional obsolescence:
- (a) excess capital cost, which can be caused by changes in design, materials of construction, technology or manufacturing techniques resulting in the availability of modern equivalent assets with lower capital costs than the subject asset, and
 - (b) excess operating cost, which can be caused by improvements in design or excess capacity resulting in the availability of modern equivalent assets with lower operating costs than the subject asset.

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- 80.7. Economic obsolescence *may* arise when external factors affect an individual asset or all the assets employed in a business and *should* be deducted after physical deterioration and functional obsolescence. For real estate, examples of economic obsolescence include:
- (a) adverse changes to demand for the products or services produced by the asset,
 - (b) oversupply in the market for the asset,
 - (c) a disruption or loss of a supply of labour or raw material, or
 - (d) the asset being used by a business that cannot afford to pay a market rent for the assets and still generate a market rate of return.

- 80.8. Cash or cash equivalents do not suffer obsolescence and are not adjusted. Marketable assets are not adjusted below their *market value* determined using the market approach.

90. Valuation Model

- 90.1. A valuation model refers collectively to the quantitative methods, systems, techniques and qualitative judgements used to estimate and document *value*.
- 90.2. When using or creating a valuation model, the *valuer* must:
- (a) Keep appropriate records to support the selection or creation of the model,
 - (b) Understand and ensure the output of the valuation model, the significant assumptions and limiting conditions are consistent with the basis and scope of the *valuation*, and
 - (c) Consider the key risks associated with the assumptions made in the valuation model.
- 90.3. Regardless of the nature of the valuation model, to be IVS compliant, the *valuer* must ensure that the *valuation* complies with all other requirements contained within IVS.

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IVS 200 Businesses and Business Interests

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of businesses and business interests. This standard contains additional requirements that apply to *valuations* of businesses and business interests.

20. Introduction

- 20.1. The definition of what constitutes a business *may* differ depending on the *purpose* of a *valuation*, but generally involves an organisation or integrated collection of *assets* engaged in commercial, industrial, service or investment activity. Generally, a business would include more than one *asset* (or a single *asset* in which the *value* is dependent on employing additional *assets*) working together to generate economic activity that differs from the outputs that would be generated by the individual *assets* on their own.
- 20.2. Individual intangible assets, or a group of intangible assets might not constitute a business but would nonetheless be within the scope of this standard if such *assets* generate economic activity that differs from the outputs that would be generated by the individual assets on their own. If the *assets* do not meet these criteria, a *valuer* should defer to IVS 210 *Intangible Assets* and IVS 220 *Non-Financial Liabilities*.

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- 20.3. The commercial, industrial, service or investment activity of the business may result in greater economic activity (ie, *value*), than those assets would generate separately. The excess value is often referred to as going concern value or goodwill. This excess value may constitute a separate asset under certain *bases of value* in certain situations. The absence of excess value does not automatically mean that the asset or group of assets does not constitute a business. In addition, economically, substantially all of the *value of assets* within a business may reside in a single asset.
- 20.4. Businesses can take many legal forms, such as corporations, partnerships, joint ventures and sole proprietorships. However, businesses could take other forms such as a division, branch, line of business, segment, cash generating unit, and asset group that can consist of parts of one or more legal entities.
- 20.5. Interests in a business (eg, securities) can also take many forms. To determine the value of a business interest, a *valuer* should first determine the *value* of the underlying business by applying these standards. In such instances, business interests should be within the scope of this standard but depending on the nature of the interest certain other standards may be applicable.
- 20.6. *Valuers* must establish whether the *valuation* is of the entire entity, shares or a shareholding in the entity (whether a controlling or non-controlling interest), or a specific business activity of the entity. The type of *value* being provided must be appropriate to the *purpose of the valuation* and communicated as part of the scope of the engagement (see IVS 101 *Scope of Work*). It is especially critical to clearly define the business or business interest being valued as, even when a *valuation* is performed on an entire entity, there may be different levels at which that *value* could be expressed. For example:
- (a) Enterprise value: Often described as the total value of the equity in a business plus the *value* of its debt or debt-related liabilities, minus any cash or cash equivalents available to meet those liabilities.
 - (b) Total invested capital value: The total amount of money currently invested in a business, regardless of the source, often reflected as the *value* of total assets less current liabilities and cash.
 - (c) Operating value: The total value of the operations of the business, excluding the value of any non-operating assets and liabilities.
 - (d) Equity value: The *value* of a business to all of its equity shareholders.
- 20.7. *Valuations* of businesses are required for different purposes including acquisitions, mergers and sales of businesses, taxation, litigation, insolvency proceedings and financial reporting. Business valuations may also be needed as an input or step in other *valuations* such as the *valuation* of stock options, particular class(es) of stock, or debt.
- 30. Bases of Value**
- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer* must select the appropriate *basis(es) of value* when valuing a business or business interest.
- 30.2. Often, business valuations are performed using *bases of value* defined by entities/organisations other than the IVSC (some examples of which are

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mentioned in IVS 104 *Bases of Value*) and it is the *valuer's* responsibility to understand and follow the regulation, case law and/or other interpretive guidance related to those *bases of value* as of the valuation date.

40. Valuation Approaches and Methods

- 40.1. The three principal valuation approaches described in IVS 105 *Valuation Approaches and Methods* may be applied to the *valuation* of businesses and business interests.
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches and Methods*, including para 10.3.

50. Market Approach

- 50.1. The market approach is frequently applied in the *valuation* of businesses and business interests as these *assets* often meet the criteria in IVS 105 *Valuation Approaches and Methods*, para 20.2 or 20.3. When valuing businesses and business interests under the Market Approach, *valuers should* follow the requirements of IVS 105 *Valuation Approaches and Methods*, sections 20 and 30.
- 50.2. The three most common sources of data used to value businesses and business interests using the market approach are:
 - (a) public stock markets in which ownership interests of similar businesses are traded,
 - (b) the acquisition market in which entire businesses or controlling interests in businesses are bought and sold, and
 - (c) prior transactions in shares or offers for the ownership of the subject business.
- 50.3. There *must* be a reasonable basis for comparison with, and reliance upon, similar businesses in the market approach. These similar businesses *should* be in the same industry as the subject business or in an industry that responds to the same economic variables. Factors that *should* be considered in assessing whether a reasonable basis for comparison exists include:
 - (a) similarity to the subject business in terms of qualitative and quantitative business characteristics,
 - (b) amount and verifiability of data on the similar business, and
 - (c) whether the *price* of the similar business represents an arm's length and orderly transaction.
- 50.4. When applying a market multiple, adjustments such as those in para 60.8 *may* be appropriate to both the subject company and the comparable companies.
- 50.5. *Valuers should* follow the requirements of IVS 105 *Valuation Approaches and Methods*, paras 30.7-30.8 when selecting and adjusting comparable transactions.

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- 50.6. *Valuers should follow the requirements of IVS 105 Valuation Approaches and Methods*, paras 30.13-30.14 when selecting and adjusting comparable public company information.

60. Income Approach

- 60.1. The income approach is frequently applied in the *valuation* of businesses and business interests as these *assets* often meet the criteria in IVS 105 *Valuation Approaches and Methods*, paras 40.2 or 40.3.
- 60.2. When the income approach is applied, *valuers should* follow the requirements of IVS 105 *Valuation Approaches and Methods*, sections 40 and 50.
- 60.3. Income and cash flow related to a business or business interest can be measured in a variety of ways and *may* be on a pre-tax or post-tax basis. The capitalisation or *discount rate* applied *must* be consistent with the type of income or cash flow used.
- 60.4. The type of income or cash flow used *should* be consistent with the type of interest being valued. For example:
- (a) enterprise value is typically derived using cash flows before debt servicing costs and an appropriate *discount rate* applicable to enterprise-level cash flows, such as a *weighted-average cost of capital*, and
 - (b) equity value *may* be derived using cash flows to equity, that is, after debt servicing costs and an appropriate *discount rate* applicable to equity-level cash flows, such as a *cost of equity*.
- 60.5. The income approach requires the estimation of a capitalisation rate when capitalising income or cash flow and a *discount rate* when discounting cash flow. In estimating the appropriate rate, factors such as the level of interest rates, rates of return expected by *participants* for similar investments and the risk inherent in the anticipated benefit stream are considered (see IVS 105 *Valuation Approaches and Methods*, paras 50.29-50.31).
- 60.6. In methods that employ discounting, expected growth *may* be explicitly considered in the forecasted income or cash flow. In capitalisation methods, expected growth is normally reflected in the capitalisation rate. If a forecasted cash flow is expressed in nominal terms, a *discount rate* that takes into account the expectation of future price changes due to inflation or deflation *should* be used. If a forecasted cash flow is expressed in real terms, a *discount rate* that takes no account of expected price changes due to inflation or deflation *should* be used.
- 60.7. Under the income approach, the historical financial statements of a business entity are often used as guide to estimate the future income or cash flow of the business. Determining the historical trends over time through ratio analysis *may* help provide the necessary information to assess the risks inherent in the business operations in the context of the industry and the prospects for future performance.

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- 60.8. Adjustments *may* be appropriate to reflect differences between the actual historic cash flows and those that would be experienced by a buyer of the business interest on the valuation date. Examples include:
- (a) adjusting revenues and expenses to levels that are reasonably representative of expected continuing operations,
 - (b) presenting financial data of the subject business and comparison businesses on a consistent basis,
 - (c) adjusting non-arm's length transactions (such as contracts with customers or suppliers) to market rates,
 - (d) adjusting the *cost* of labour or of items leased or otherwise contracted from related parties to reflect market prices or rates,
 - (e) reflecting the impact of non-recurring events from historic revenue and expense items. Examples of non-recurring events include losses caused by strikes, new plant start-up and weather phenomena. However, the forecast cash flows *should* reflect any non-recurring revenues or expenses that can be reasonably anticipated and past occurrences *may* be indicative of similar events in the future, and
 - (f) adjusting the inventory accounting to compare with similar businesses, whose accounts *may* be kept on a different basis from the subject business, or to more accurately reflect economic reality.
- 60.9. When using an income approach it *may* also be necessary to make adjustments to the *valuation* to reflect matters that are not captured in either the cash flow forecasts or the *discount rate* adopted. Examples *may* include adjustments for the marketability of the interest being valued or whether the interest being valued is a controlling or non-controlling interest in the business. However, *valuers* *should* ensure that adjustments to the *valuation* do not reflect factors that were already reflected in the cash flows or *discount rate*. For example, whether the interest being valued is a controlling or non-controlling interest is often already reflected in the forecasted cash flows.
- 60.10. While many businesses *may* be valued using a single cash flow scenario, *valuers* *may* also apply multi-scenario or simulation models, particularly when there is *significant* uncertainty as to the amount and/or timing of future cash flows.

70. Cost Approach

- 70.1. The cost approach cannot normally be applied in the *valuation* of businesses and business interests as these assets seldom meet the criteria in IVS 105 *Valuation Approaches and Methods*, paras 70.2 or 70.3. However, the cost approach is sometimes applied in the *valuation* of businesses, particularly when:
- (a) the business is an early stage or start-up business where profits and/ or cash flow cannot be reliably determined and comparisons with other businesses under the market approach is impractical or unreliable,
 - (b) the business is an investment or holding business, in which case the summation method is as described in IVS 105 *Valuation Approaches and Methods*, paras 70.8-70.9, and/or

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- (c) the business does not represent a going concern and/or the *value* of its assets in a liquidation *may exceed* the business' *value* as a going concern.
- 70.2. In the circumstances where a business or business interest is valued using a cost approach, *valuers should* follow the requirements of IVS 105 *Valuation Approaches and Methods*, sections 70 and 80.
- 80. Special Considerations for Businesses and Business Interests**
- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of businesses and business interests:
- (a) Ownership Rights (section 90).
 - (b) Business Information (section 100).
 - (c) Economic and Industry Considerations (section 110).
 - (d) Operating and Non-Operating Assets (section 120).
 - (e) Capital Structure Considerations (section 130).
- 90. Ownership Rights**
- 90.1. The rights, privileges or conditions that attach to the ownership interest, whether held in proprietorship, corporate or partnership form, require consideration in the valuation process. Ownership rights are usually defined within a *jurisdiction* by legal documents such as articles of association, clauses in the memorandum of the business, articles of incorporation, bylaws, partnership agreements and shareholder agreements (collectively "corporate documents"). In some situations, it *may also* be necessary to distinguish between legal and beneficial ownership.
- 90.2. Corporate documents *may* contain restrictions on the transfer of the interest or other provisions relevant to *value*. For example, corporate documents *may* stipulate that the interest *should* be valued as a pro rata fraction of the entire issued share capital regardless of whether it is a controlling or non-controlling interest. In each case, the rights of the interest being valued and the rights attaching to any other class of interest need to be considered at the outset.
- 90.3. Care *should* be taken to distinguish between rights and obligations inherent to the interest and those that *may* be applicable only to a particular shareholder (ie, those contained in an agreement between current shareholders which *may* not apply to a potential buyer of the ownership interest). Depending on the *basis(es)* of *value* used, the *valuer may* be required to consider only the rights and obligations inherent to the subject interest or both those rights and considerations inherent to the subject interest and those that apply to a particular owner.
- 90.4. All the rights and preferences associated with a subject business or business interest *should* be considered in a *valuation*, including:
- (a) if there are multiple classes of stock, the *valuation should* consider the rights of each different class, including, but not limited to:
 - 1. liquidation preferences,

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- 2. voting rights,
 - 3. redemption, conversion and participation provisions, and
 - 4. put and/or call rights.
- (b) When a controlling interest in a business *may* have a higher *value* than a non-controlling interest. Control premiums or discounts for lack of control *may* be appropriate depending on the valuation method(s) applied (see IVS 105 *Valuation Approaches and Methods*, para 30.17.(b)). In respect of actual premiums paid in completed transactions, the *valuer* *should* consider whether the synergies and other factors that caused the acquirer to pay those premiums are applicable to the subject *asset* to a comparable degree.

100. Business Information

100.1. The *valuation* of a business entity or interest frequently requires reliance upon information received from management, representatives of the management or other experts. As required by IVS 105 *Valuation Approaches and Methods*, para 10.7, a *valuer* *must* assess the reasonableness of information received from management, representatives of management or other experts and evaluate whether it is appropriate to rely on that information for the valuation *purpose*. For example, prospective financial information provided by management *may* reflect owner-specific synergies that *may* not be appropriate when using a *basis of value* that requires a *participant* perspective.

100.2. Although the *value* on a given date reflects the anticipated benefits of future ownership, the history of a business is useful in that it *may* give guidance as to the expectations for the future. *Valuers* *should* therefore consider the business' historical financial statements as part of a valuation engagement. To the extent the future performance of the business is expected to deviate *significantly* from historical experience, a *valuer* *must* understand why historical performance is not representative of the future expectations of the business.

110. Economic and Industry Considerations

110.1. Awareness of relevant economic developments and specific industry trends is essential for all *valuations*. Matters such as political outlook, government policy, exchange rates, inflation, interest rates and market activity *may* affect *assets* in different locations and/or sectors of the economy quite differently. These factors can be particularly important in the *valuation* of businesses and business interests, as businesses *may* have complex structures involving multiple locations and types of operations. For example, a business *may* be impacted by economic and industry factors specific related to:

- (a) the registered location of the business headquarters and legal form of the business,
- (b) the nature of the business operations and where each aspect of the business is conducted (ie, manufacturing *may* be done in a different location to where research and development is conducted),
- (c) where the business sells its goods and/or services,
- (d) the currency(ies) the business uses,

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- (e) where the suppliers of the business are located, and
- (f) what tax and legal *jurisdictions* the business is subject to.

120. Operating and Non-Operating Assets

- 120.1. The *valuation* of an ownership interest in a business is only relevant in the context of the financial position of the business at a point in time. It is important to understand the nature of *assets* and liabilities of the business and to determine which items are required for use in the income-producing operations of the business and which ones are redundant or “excess” to the business at the valuation date.
- 120.2. Most valuation methods do not capture the *value of assets* that are not required for the operation of the business. For example, a business valued using a multiple of EBITDA would only capture the *value* the *assets* utilised in generating that level of EBITDA. If the business had non-operating *assets* or liabilities such as an idle manufacturing plant, the *value* of that non-operating plant would not be captured in the *value*. Depending on the level of *value* appropriate for the valuation engagement (see para 20.3), the *value* of non-operating *assets* *may* need to be separately determined and added to the operating value of the business.
- 120.3. Businesses *may* have unrecorded *assets* and/or liabilities that are not reflected on the balance sheet. Such *assets* could include intangible *assets*, machinery and equipment that is fully depreciated and legal liabilities/lawsuits.
- 120.4. When separately considering non-operating *assets* and liabilities, a *valuer* *should* ensure that the income and expenses associated with non-operating *assets* are excluded from the cash flow measurements and projections used in the *valuation*. For example, if a business has a *significant* liability associated with an underfunded pension and that liability is valued separately, the cash flows used in the *valuation* of the business *should* exclude any “catch-up” payments related to that liability.
- 120.5. If the *valuation* considers information from publicly-traded businesses, the publicly-traded stock prices implicitly include the *value* of non-operating *assets*, if any. As such, *valuers must* consider adjusting information from publicly-traded businesses to exclude the *value*, income and expenses associated with non-operating *assets*.

130. Capital Structure Considerations

- 130.1. Businesses are often financed through a combination of debt and equity. However, in many cases, *valuers* could be asked to value only equity, particular class of equity, or some other form of ownership interest. While equity or a particular class of equity can occasionally be valued directly, more often the enterprise value of the business is determined and then that *value* is allocated between the various classes of debt and equity.
- 130.2. While there are many ownership interests in an *asset* which a *valuer* could be asked to value, a non-exhaustive list of such interests includes:
 - (a) bonds,
 - (b) convertible debt,

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- (c) partnership interest,
- (d) minority interest,
- (e) common equity,
- (f) preferred equity,
- (g) options,
- (h) warrants.

130.3. When a *valuer* is asked to value only equity, or determine how the business value as a whole is distributed among the various debt and equity classes, a *valuer* *must* determine and consider the different rights and preferences associated with each class of debt and equity. Rights and preferences can broadly be categorised as economic rights or control rights.

A non-exhaustive list of such rights and preferences *may* include:

- (a) dividend or preferred dividend rights,
- (b) liquidation preferences,
- (c) voting rights,
- (d) redemption rights,
- (e) conversion rights,
- (f) participation rights,
- (g) anti-dilution rights
- (h) registration rights, and
- (i) put and/or call rights.

130.4. For simple capital structures that include only common stock and simple debt structures (such as bonds, loans and overdrafts), it *may* be possible to estimate the *value* of all of the common stock within the enterprise by directly estimating the *value* of debt, subtracting that *value* from the enterprise value, then allocating the residual equity value pro rata to all of the common stock. This method is not appropriate for all companies with simple capital structures, for example it *may* not be appropriate for distressed or highly leveraged companies.

130.5. For complex capital structures, being those that include a form of equity other than just common stock, *valuers* *may* use any reasonable method to determine the *value* of equity or a particular class of equity. In such cases, typically the enterprise value of the business is determined and then that *value* is allocated between the various classes of debt and equity. Three methods that *valuers* could utilise in such instances are discussed in this section, including:

- (a) current value method (CVM);
- (b) option pricing method (OPM); and

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(c) probability-weighted expected return method (PWERM).

- 130.6. While the CVM is not forward looking, both the OPM and PWERM estimate values assuming various future outcomes. The PWERM relies on discrete assumptions for future events and the OPM estimates the future distribution of outcomes using a lognormal distribution around the current value.
- 130.7. A *valuer* should consider any potential differences between a “pre-money” and “post-money” valuation, particularly for early stage companies with complex capital structures. For example, an infusion of cash (ie, “post-money valuation”) for such companies *may* impact the overall risk profile of the enterprise as well as the relative value allocation between share classes.
- 130.8. A *valuer* should consider recent transactions in the subject equity or a particular class of equity, and ensure the assumptions used in the subject *valuation* are updated as necessary to reflect changes in the investment structure and changes in market conditions.

Current Value Method (CVM)

- 130.9. The current value method (CVM) allocates the enterprise value to the various debt and equity securities assuming an immediate sale of the enterprise. Under the CVM, the obligations to debt holders, or debt equivalent securities, is first deducted from the enterprise value to calculate residual equity value (*valuers* should consider if the enterprise value includes or excludes cash, and the resulting use of gross or net debt for allocation purposes). Next, *value* is allocated to the various series of preferred stock based on the series’ liquidation preferences or conversion values, whichever would be greater. Finally, any residual value is allocated to any common equity, options, and warrants.
- 130.10. A limitation of the CVM is that it is not forward looking and fails to consider the option-like payoffs of many share classes.
- 130.11. The CVM should only be used when 1) a liquidity event of the enterprise is imminent, 2) when an enterprise is at such an early stage of its development that no significant common equity value above the liquidation preference on any preferred equity has been created, 3) no material progress has been made on the company’s business plan, or 4) no reasonable basis exists for estimating the amount and timing of any such *value* above the liquidation preference that might be created in the future.
- 130.12. *Valuers* should not assume that the *value* of debt, or debt-like securities, and its book value are equal without rationale for the determination.

Option Pricing Method (OPM)

- 130.13. The OPM values the different share classes by treating each share class as an option on the cash flows from the enterprise. The OPM is often applied to capital structures in which the payout to different share classes changes at different levels of total equity value, for instance, where there are convertible preferred shares, management incentive units, options, or other classes of shares that have certain liquidation preferences. The OPM may be performed on the enterprise value, thereby including any debt in the OPM, or on an equity basis after separate consideration of the debt.

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- 130.14. The OPM considers the various terms of the stockholder agreements that would affect the distributions to each class of equity upon a liquidity event, including the level of seniority among the securities, dividend policy, conversion ratios, and cash allocations.
- 130.15. The starting point for the OPM is the *value* of total equity for the *asset*. The OPM is then applied to allocate the total equity value among equity securities.
- 130.16. The OPM (or a related hybrid method) is suited to circumstances where specific future liquidity events are difficult to forecast or the company is in an early stage of development.
- 130.17. The OPM most frequently relies on the Black–Scholes option pricing model to determine the *value* associated with distributions above certain value thresholds.
- 130.18. When applying the OPM, a non-exhaustive list of the steps *valuers should* perform includes:
- (a) Determine the total equity value of the *asset*,
 - (b) Identify the liquidation preferences, preferred dividend accruals, conversion prices, and other features attached to the relevant securities that influences the cash distribution,
 - (c) Determine the different total equity value points (breakpoints) in which the liquidation preferences and conversion prices become effective,
 - (d) Determine the inputs to the Black–Scholes model:
 - 1) determine a reasonable time horizon for the OPM,
 - 2) select a risk-free rate corresponding to the time horizon,
 - 3) determine the appropriate volatility factor for the equity of the *asset*, and,
 - 4) determine the expected dividend yield.
 - (e) Calculate a *value* for the various call options and determine the *value* allocated to each interval between the breakpoints,
 - (f) Determine the relative allocation to each class of shares in each interval between the calculated breakpoints,
 - (g) Allocate the *value* between the breakpoints (calculated as the call options) among the share classes based on the allocation determined in step (f) and the *value* determined in step (e),
 - (h) Consider additional adjustments to the share classes as necessary, consistent with the *basis of value*. For example, it *may* be appropriate to apply discounts or premiums.

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130.19. When determining the appropriate volatility assumption *valuers should consider:*

- 1) the development stage of the *asset* and the relative impact to the volatility when compared to that observed by the comparable companies, and,
- 2) the relative financial leverage of the *asset*.

130.20. In addition to the method as discussed above, the OPM can be used to back solve for the *value* of total equity value when there is a known price for an individual security. The inputs to a back solve analysis are the same as above. *Valuers* will then solve for the *price* of the known security by changing the *value* of total equity. The back solve method will also provide a *value* for all other equity securities.

Probability-Weighted Expected Return Method (PWERM)

130.21. Under a PWERM, the *value* of the various equity securities are estimated based upon an analysis of future *values* for the *asset*, assuming various future outcomes. Share value is based upon the probability-*weighted* present value of expected future investment returns, considering each of the possible future outcomes available to the *asset*, as well as the rights and preferences of the share classes.

130.22. Typically, the PWERM is used when the company is close to exit and does not plan on raising additional capital.

130.23. When applying the PWERM, a non-exhaustive list of the steps *valuers should* perform includes:

- (a) Determine the possible future outcomes available to the *asset*,
- (b) Estimate the future value of the *asset* under each outcome,
- (c) Allocate the estimated future value of the *asset* to each class of debt and equity under each possible outcome,
- (d) Discount the expected value allocated to each class of debt and equity to present value using a risk-adjusted *discount rate*,
- (e) *Weight* each possible outcome by its respective probability to estimate the expected future probability-*weighted* cash flows to each class of debt and equity,
- (f) Consider additional adjustments to the share classes as necessary, consistent with the *basis of value*. For example, it *may* be appropriate to apply discounts or premiums.

130.24. *Valuers should* reconcile the probability-weighted present values of the future exit values to the overall *asset* value to make sure that the overall *valuation* of the enterprise is reasonable.

130.25. *Valuers* can combine elements of the OPM with the PWERM to create a hybrid methodology by using the OPM to estimate the allocation of *value* within one or more of the probability-*weighted* scenarios.

IVS 210 Intangible Assets

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of intangible assets and *valuations* with an intangible assets component. This standard contains additional requirements that apply to *valuations* of intangible assets.

20. Introduction

- 20.1. An intangible asset is a non-monetary asset that manifests itself by its economic properties. It does not have physical substance but grants rights and/or economic benefits to its owner.
- 20.2. Specific intangible assets are defined and described by characteristics such as their ownership, function, market position and image. These characteristics differentiate intangible assets from one another.
- 20.3. There are many types of intangible assets, but they are often considered to fall into one or more of the following categories (or goodwill):
- (a) Marketing-related: Marketing-related intangible assets are used primarily in the marketing or promotion of products or services. Examples include trademarks, trade names, unique trade design and internet domain names.
 - (b) Customer-related: Customer-related intangible assets include customer lists, backlog, customer contracts, and contractual and non-contractual customer relationships.
 - (c) Artistic-related: Artistic-related intangible assets arise from the right to benefits from artistic works such as plays, books, films and music, and from non-contractual copyright protection.
 - (d) Contract-related: Contract-related intangible assets represent the value of rights that arise from contractual agreements. Examples include licensing and royalty agreements, service or supply contracts, lease

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agreements, permits, broadcast rights, servicing contracts, employment contracts and non-competition agreements and natural resource rights.

- (e) Technology-based: Technology-related intangible assets arise from contractual or non-contractual rights to use patented technology, unpatented technology, databases, formulae, designs, software, processes or recipes.
- 20.4. Although similar intangible assets within the same class will share some characteristics with one another, they will also have differentiating characteristics that will vary according to the type of intangible asset. In addition, certain intangible assets, such as brands, *may* represent a combination of categories in para 20.3.
- 20.5. Particularly in valuing an intangible *asset*, *valuers must* understand specifically what needs to be valued and the *purpose of the valuation*. For example, customer data (names, addresses, etc) typically has a very different value from customer contracts (those contracts in place on the valuation date) and customer relationships (the *value* of the ongoing customer relationship including existing and future contracts). What intangible assets need to be valued and how those intangible assets are defined *may* differ depending on the *purpose of the valuation*, and the differences in how intangible assets are defined can lead to *significant* differences in *value*.
- 20.6. Generally, goodwill is any future economic benefit arising from a business, an interest in a business or from the use of a group of assets which has not been separately recognised in another *asset*. The *value* of goodwill is typically measured as the residual amount remaining after the *values* of all identifiable tangible, intangible and monetary *assets*, adjusted for actual or potential liabilities, have been deducted from the *value* of a business. It is often represented as the excess of the price paid in a real or hypothetical acquisition of a company over the *value* of the company's other identified *assets* and liabilities. For some *purposes*, goodwill *may* need to be further divided into transferable goodwill (that which can be transferred to third parties) and non-transferable or "personal" goodwill.
- 20.7. As the amount of goodwill is dependent on which other tangible and intangible assets are recognised, its *value* can be different when calculated for different *purposes*. For example, in a business combination accounted for under IFRS or US GAAP, an intangible *asset* is only recognised to the extent that it:
- (a) is separable, ie, capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable *asset* or liability, regardless of whether the entity intends to do so, or
 - (b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

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- 20.8. While the aspects of goodwill can vary depending on the *purpose* of the *valuation*, goodwill frequently includes elements such as:
- (a) company-specific synergies arising from a combination of two or more businesses (eg, reductions in operating costs, economies of scale or product mix dynamics),
 - (b) opportunities to expand the business into new and different markets,
 - (c) the benefit of an assembled workforce (but generally not any intellectual property developed by members of that workforce),
 - (d) the benefit to be derived from future *assets*, such as new customers and future technologies, and
 - (e) assemblage and going concern value.
- 20.9. *Valuers* may perform direct *valuations* of intangible assets where the *value* of the intangible assets is the *purpose* of the analysis or one part of the analysis. However, when *valuing* businesses, business interests, real property, and machinery and equipment, *valuers* should consider whether there are intangible assets associated with those *assets* and whether those directly or indirectly impact the *asset* being valued. For example, when *valuing* a hotel based on an income approach, the contribution to *value* of the hotel's brand *may* already be reflected in the profit generated by the hotel.
- 20.10. Intangible asset valuations are performed for a variety of *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation* and whether intangible assets *should* be valued, whether separately or grouped with other *assets*. A non-exhaustive list of examples of circumstances that commonly include an intangible asset valuation component is provided below:
- (a) For financial reporting *purposes*, *valuations* of intangible assets are often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis.
 - (b) For tax reporting *purposes*, intangible asset valuations are frequently needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses.
 - (c) Intangible assets *may* be the subject of litigation, requiring valuation analysis in circumstances such as shareholder disputes, damage calculations and marital dissolutions (divorce).
 - (d) Other statutory or legal events *may* require the *valuation* of intangible assets such as compulsory purchases/ eminent domain proceedings.
 - (e) *Valuers* are often asked to value intangible assets as part of general consulting, collateral lending and transactional support engagements.

30. Bases of Value

- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer* must select the appropriate *basis(es)* of *value* when valuing intangible assets.
- 30.2. Often, intangible asset valuations are performed using *bases of value* defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 104 *Bases of Value*) and the *valuer* must

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understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the valuation date.

40. Valuation Approaches and Methods

- 40.1. The three valuation approaches described in IVS 105 *Valuation Approaches* can all be applied to the *valuation* of intangible assets.
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer* *must* follow the requirements of IVS 105 *Valuation Approaches*, including para 10.3.

50. Market Approach

- 50.1. Under the market approach, the *value* of an intangible asset is determined by reference to market activity (for example, transactions involving identical or similar *assets*).
- 50.2. Transactions involving intangible assets frequently also include other *assets*, such as a business combination that includes intangible assets.
- 50.3. *Valuers must* comply with paras 20.2 and 20.3 of IVS 105 when determining whether to apply the market approach to the *valuation* of intangible assets. In addition, *valuers should* only apply the market approach to value intangible assets if both of the following criteria are met:
 - (a) information is available on arm's length transactions involving identical or similar intangible assets on or near the valuation date, and
 - (b) sufficient information is available to allow the *valuer* to adjust for all *significant* differences between the subject intangible *asset* and those involved in the transactions.
- 50.4. The heterogeneous nature of intangible assets and the fact that intangible assets seldom transact separately from other *assets* means that it is rarely possible to find market evidence of transactions involving identical *assets*. If there is market evidence at all, it is usually in respect of *assets* that are similar, but not identical.
- 50.5. Where evidence of either *prices* or valuation multiples is available, *valuers should* make adjustments to these to reflect differences between the subject *asset* and those involved in the transactions. These adjustments are necessary to reflect the differentiating characteristics of the subject intangible *asset* and the *assets* involved in the transactions. Such adjustments *may* only be determinable at a qualitative, rather than quantitative, level. However, the need for *significant* qualitative adjustments *may* indicate that another approach would be more appropriate for the *valuation*.
- 50.6. Consistent with the above, examples of intangible assets for which the market approach is sometimes used include:
 - (a) broadcast spectrum,
 - (b) internet domain names, and
 - (c) taxi medallions.

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- 50.7. The guideline transactions method is generally the only market approach method that can be applied to intangible assets.
- 50.8. In rare circumstances, a security sufficiently similar to a subject intangible asset *may* be publicly traded, allowing the use of the guideline public company method. One example of such securities is contingent value rights (CVRs) that are tied to the performance of a particular product or technology.

60. Income Approach

- 60.1. Under the income approach, the *value* of an intangible asset is determined by reference to the present value of income, cash flows or cost savings attributable to the intangible asset over its economic life.
- 60.2. *Valuers must* comply with paras 40.2 and 40.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the income approach to the *valuation* of intangible assets.
- 60.3. Income related to intangible assets is frequently included in the price paid for goods or a service. It *may* be challenging to separate the income related to the intangible asset from income related to other tangible and intangible assets. Many of the income approach methods are designed to separate the economic benefits associated with a subject intangible asset.
- 60.4. The income approach is the most common method applied to the *valuation* of intangible assets and is frequently used to value intangible assets including the following:
 - (a) technology,
 - (b) customer-related intangibles (eg, backlog, contracts, relationships),
 - (c) tradenames/trademarks/brands,
 - (d) operating licenses (eg, franchise agreements, gaming licenses, broadcast spectrum), and
 - (e) non-competition agreements.

Income Approach Methods

- 60.5. There are many income approach methods. The following methods are discussed in this standard in more detail:
 - (a) excess earnings method,
 - (b) relief-from-royalty method,
 - (c) premium profit method or with-and-without method,
 - (d) greenfield method, and
 - (e) distributor method.

Excess Earnings Method

- 60.6. The excess earnings method estimates the *value* of an intangible asset as the present value of the cash flows attributable to the subject intangible

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asset after excluding the proportion of the cash flows that are attributable to other *assets* required to generate the cash flows (“*contributory assets*”). It is often used for *valuations* where there is a requirement for the acquirer to allocate the overall price paid for a business between tangible *assets*, identifiable intangible assets and goodwill.

- 60.7. Contributory *assets* are *assets* that are used in conjunction with the subject intangible *asset* in the realisation of prospective cash flows associated with the subject intangible *asset*. *Assets* that do not contribute to the prospective cash flows associated with the subject intangible *asset* are not contributory *assets*.
- 60.8. The excess earnings method can be applied using several periods of forecasted cash flows (“multi-period excess earnings method” or “MPEEM”), a single period of forecasted cash flows (“single-period excess earnings method”) or by capitalising a single period of forecasted cash flows (“capitalised excess earnings method” or the “formula method”).
- 60.9. The capitalised excess earnings method or formula method is generally only appropriate if the intangible *asset* is operating in a steady state with stable growth/decay rates, constant profit margins and consistent contributory *asset* levels/charges.
- 60.10. As most intangible assets have economic lives exceeding one period, frequently follow non-linear growth/decay patterns and *may* require different levels of contributory *assets* over time, the MPEEM is the most commonly used excess earnings method as it offers the most flexibility and allows *valuers* to explicitly forecast changes in such inputs.
- 60.11. Whether applied in a single-period, multi-period or capitalised manner, the key steps in applying an excess earnings method are to:
 - (a) forecast the amount and timing of future revenues driven by the subject intangible *asset* and related contributory *assets*,
 - (b) forecast the amount and timing of expenses that are required to generate the revenue from the subject intangible *asset* and related contributory *assets*,
 - (c) adjust the expenses to exclude those related to creation of new intangible *assets* that are not required to generate the forecasted revenue and expenses. Profit margins in the excess earnings method *may* be higher than profit margins for the overall business because the excess earnings method excludes investment in certain new intangible *assets*. For example:
 - 1. research and development expenditures related to development of new technology would not be required when *valuing* only existing technology, and
 - 2. marketing expenses related to obtaining new customers would not be required when valuing existing customer-related intangible *assets*.
 - (d) identify the contributory *assets* that are needed to achieve the forecasted revenue and expenses. Contributory *assets* often include working capital, fixed *assets*, assembled workforce and identified intangible *assets* other than the subject intangible *asset*,

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- (e) determine the appropriate rate of return on each contributory asset based on an assessment of the risk associated with that asset. For example, low-risk assets like working capital will typically have a relatively lower required return. Contributory intangible assets and highly specialised machinery and equipment often require relatively higher rates of return,
 - (f) in each forecast period, deduct the required returns on contributory assets from the forecast profit to arrive at the excess earnings attributable to only the subject intangible asset,
 - (g) determine the appropriate *discount rate* for the subject intangible asset and present value or capitalise the excess earnings, and
 - (h) if appropriate for the *purpose of the valuation* (see paras 110.1-110.4), calculate and add the tax amortisation benefit (TAB) for the subject intangible asset.
- 60.12. Contributory asset charges (CACs) *should* be made for all the current and future tangible, intangible and financial assets that contribute to the generation of the cash flow, and if an asset for which a CAC is required is involved in more than one line of business, its CAC *should* be allocated to the different lines of business involved.
- 60.13. The determination of whether a CAC for elements of goodwill is appropriate *should* be based on an assessment of the relevant facts and circumstances of the situation, and the *valuer* *should* not mechanically apply CACs or alternative adjustments for elements of goodwill if the circumstances do not warrant such a charge. Assembled workforce, as it is quantifiable, is typically the only element of goodwill for which a CAC *should* be taken. Accordingly, *valuers must* ensure they have a strong basis for applying CACs for any elements of goodwill other than assembled workforce.
- 60.14. CACs are generally computed on an after-tax basis as a fair return on the *value* of the contributory asset, and in some cases a return of the contributory asset is also deducted. The appropriate return on a contributory asset is the investment return a typical *participant* would require on the asset. The return of a contributory asset is a recovery of the initial investment in the asset. There *should* be no difference in *value* regardless of whether CACs are computed on a pre-tax or after-tax basis.
- 60.15. If the contributory asset is not wasting in nature, like working capital, only a fair return on the asset is required.
- 60.16. For contributory intangible assets that were valued under a relief-from-royalty method, the CAC *should* be equal to the royalty (generally adjusted to an after-tax royalty rate).
- 60.17. The excess earnings method *should* be applied only to a single intangible asset for any given stream of revenue and income (generally the primary or most important intangible asset). For example, in valuing the intangible assets of a company utilising both technology and a tradename in delivering a product or service (ie, the revenue associated with the technology and the tradename is the same), the excess earnings method *should* only be used to value one of the intangible assets and an alternative method *should* be used

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for the other asset. However, if the company had multiple product lines, each using a different technology and each generating distinct revenue and profit, the excess earnings method *may* be applied in the *valuation* of the multiple different technologies.

Relief-from-Royalty Method

- 60.18. Under the relief-from-royalty method, the *value* of an intangible asset is determined by reference to the *value* of the hypothetical royalty payments that would be saved through owning the asset, as compared with licensing the intangible asset from a third party. Conceptually, the method *may* also be viewed as a discounted cash flow method applied to the cash flow that the owner of the intangible asset could receive through licensing the intangible asset to third parties.
- 60.19. The key steps in applying a relief-from-royalty method are to:
 - (a) develop projections associated with the intangible asset being valued for the life of the subject intangible asset. The most common metric projected is revenue, as most royalties are paid as a percentage of revenue. However, other metrics such as a per-unit royalty *may* be appropriate in certain *valuations*,
 - (b) develop a royalty rate for the subject intangible asset. Two methods can be used to derive a hypothetical royalty rate. The first is based on market royalty rates for comparable or similar transactions. A prerequisite for this method is the existence of comparable intangible assets that are licensed at arm's length on a regular basis. The second method is based on a split of profits that would hypothetically be paid in an arm's length transaction by a willing licensee to a willing licensor for the rights to use the subject intangible asset,
 - (c) apply the selected royalty rate to the projections to calculate the royalty payments avoided by owning the intangible asset,
 - (d) estimate any additional expenses for which a licensee of the subject asset would be responsible. This can include upfront payments required by some licensors. A royalty rate *should* be analysed to determine whether it assumes expenses (such as maintenance, marketing and advertising) are the responsibility of the licensor or the licensee. A royalty rate that is "gross" would consider all responsibilities and expenses associated with ownership of a licensed asset to reside with the licensor, while a royalty that is "net" would consider some or all responsibilities and expenses associated with the licensed asset to reside with the licensee. Depending on whether the royalty is "gross" or "net", the *valuation* *should* exclude or include, respectively, a deduction for expenses such as maintenance, marketing or advertising expenses related to the hypothetically licensed asset,
 - (e) if the hypothetical costs and royalty payments would be tax deductible, it *may* be appropriate to apply the appropriate tax rate to determine the after-tax savings associated with ownership of the intangible asset. However, for certain purposes (such as transfer pricing), the effects of taxes are generally not considered in the *valuation* and this step *should* be skipped,

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- (f) determine the appropriate *discount rate* for the subject intangible asset and present value or capitalise the savings associated with ownership of the intangible asset, and
 - (g) if appropriate for the *purpose of the valuation* (see paras 110.1-110.4), calculate and add the TAB for the subject intangible asset.
- 60.20. Whether a royalty rate is based on market transactions or a profit split method (or both), its selection *should* consider the characteristics of the subject intangible asset and the environment in which it is utilised. The consideration of those characteristics form the basis for selection of a royalty rate within a range of observed transactions and/or the range of profit available to the subject intangible asset in a profit split. Factors that *should* be considered include the following:
- (a) Competitive environment: The size of the market for the intangible asset, the availability of realistic alternatives, the number of competitors, barriers to entry and presence (or absence) of switching costs.
 - (b) Importance of the subject intangible to the owner: Whether the subject asset is a key factor of differentiation from competitors, the importance it plays in the owner's marketing strategy, its relative importance compared with other tangible and intangible assets, and the amount the owner spends on creation, upkeep and improvement of the subject asset.
 - (c) Life cycle of the subject intangible: The expected economic life of the subject asset and any risks of the subject intangible becoming obsolete.

60.21. When selecting a royalty rate, a *valuer* *should* also consider the following:

- (a) When entering a licence arrangement, the royalty rate *participants* would be willing to pay depends on their profit levels and the relative contribution of the licensed intangible asset to that profit. For example, a manufacturer of consumer products would not license a tradename at a royalty rate that leads to the manufacturer realising a lower profit selling branded products compared with selling generic products.
- (b) When considering observed royalty transactions, a *valuer* *should* understand the specific rights transferred to the licensee and any limitations. For example, royalty agreements *may* include *significant* restrictions on the use of a licensed intangible asset such as a restriction to a particular geographic area or for a product. In addition, the *valuer* *should* understand how the payments under the licensing agreement are structured, including whether there are upfront payments, milestone payments, puts/calls to acquire the licensed property outright, etc.

With-and-Without Method

60.22. The with-and-without method indicates the *value* of an intangible asset by comparing two scenarios: one in which the business uses the subject intangible asset and one in which the business does not use the subject intangible asset (but all other factors are kept constant).

60.23. The comparison of the two scenarios can be done in two ways:

- (a) calculating the *value* of the business under each scenario with the

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difference in the business values being the *value* of the subject intangible asset, and

- (b) calculating, for each future period, the difference between the profits in the two scenarios. The present value of those amounts is then used to reach the *value* of the subject intangible asset.
- 60.24. In theory, either method *should* reach a similar *value* for the intangible *asset* provided the *valuer* considers not only the impact on the entity's profit, but additional factors such as differences between the two scenarios in working capital needs and capital expenditures.
- 60.25. The with-and-without method is frequently used in the *valuation* of non-competition agreements but *may* be appropriate in the *valuation* of other intangible assets in certain circumstances.
- 60.26. The key steps in applying the with-and-without method are to:
- (a) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the use of all of the *assets* of the business including the subject intangible asset. These are the cash flows in the "with" scenario,
 - (b) use an appropriate *discount rate* to present value the future cash flows in the "with" scenario, and/or calculate the *value* of the business in the "with" scenario,
 - (c) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the use of all of the *assets* of the business except the subject intangible asset. These are the cash flows in the "without" scenario,
 - (d) use an appropriate *discount rate* for the business, present value the future cash flows in the "with" scenario and/or calculate the *value* of the business in the "with" scenario,
 - (e) deduct the present value of cash flows or the *value* of the business in the "without" scenario from the present value of cash flows or *value* of the business in the "with" scenario, and
 - (f) if appropriate for the *purpose* of the *valuation* (see paras 110.1-110.4), calculate and add the TAB for the subject intangible asset.
- 60.27. As an additional step, the difference between the two scenarios *may* need to be probability-weighted. For example, when *valuing* a non-competition agreement, the individual or business subject to the agreement *may* choose not to compete, even if the agreement were not in place.
- 60.28. The differences in *value* between the two scenarios *should* be reflected solely in the cash flow projections rather than by using different *discount rates* in the two scenarios.

Greenfield Method

- 60.29. Under the greenfield method, the *value* of the subject intangible is determined using cash flow projections that assume the only *asset* of the business at the valuation date is the subject intangible. All other tangible and intangible assets *must* be bought, built or rented.

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- 60.30. The greenfield method is conceptually similar to the excess earnings method. However, instead of subtracting contributory *asset* charges from the cash flow to reflect the contribution of contributory *assets*, the greenfield method assumes that the owner of the subject *asset* would have to build, buy or rent the contributory *assets*. When building or buying the contributory *assets*, the *cost* of a replacement *asset* of equivalent utility is used rather than a reproduction cost.
- 60.31. The greenfield method is often used to estimate the *value* of "enabling" intangible assets such as franchise agreements and broadcast spectrum.
- 60.32. The key steps in applying the greenfield method are to:
- (a) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the subject intangible *asset* is the only *asset* owned by the subject business at the valuation date, including the time period needed to "ramp up" to stabilised levels,
 - (b) estimate the timing and amount of expenditures related to the acquisition, creation or rental of all other *assets* needed to operate the subject business,
 - (c) using an appropriate *discount rate* for the business, present value the future cash flows to determine the *value* of the subject business with only the subject intangible in place, and
 - (d) if appropriate for the *purpose of the valuation* (see paras 110.1-110.4), calculate and add the TAB for the subject intangible *asset*.

Distributor Method

- 60.33. The distributor method, sometimes referred to as the disaggregated method, is a variation of the multi-period excess earnings method sometimes used to value customer-related intangible assets. The underlying theory of the distributor method is that businesses that are comprised of various functions are expected to generate profits associated with each function. As distributors generally only perform functions related to distribution of products to customers rather than development of intellectual property or manufacturing, information on profit margins earned by distributors is used to estimate the excess earnings attributable to customer-related intangible assets.
- 60.34. The distributor method is appropriate to value customer-related intangible assets when another intangible *asset* (for example, technology or a brand) is deemed to be the primary or most *significant* intangible *asset* and is valued under a multi-period excess earnings method.
- 60.35. The key steps in applying the distributor method are to:
- (a) prepare projections of revenue associated with existing customer relationships. This *should* reflect expected growth in revenue from existing customers as well as the effects of customer attrition,
 - (b) identify comparable distributors that have customer relationships similar to the subject business and calculate the profit margins achieved by those distributors,

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- (c) apply the distributor profit margin to the projected revenue,
- (d) identify the contributory assets related to performing a distribution function that are needed to achieve the forecast revenue and expenses. Generally distributor contributory assets include working capital, fixed assets and workforce. However, distributors seldom require other assets such as trademarks or technology. The level of required contributory assets should also be consistent with participants performing only a distribution function,
- (e) determine the appropriate rate of return on each contributory asset based on an assessment of the risk associated with that asset,
- (f) in each forecast period, deduct the required returns on contributory assets from the forecast distributor profit to arrive at the excess earnings attributable to only the subject intangible asset,
- (g) determine the appropriate discount rate for the subject intangible asset and present value the excess earnings, and
- (h) if appropriate for the purpose of the valuation (see paras 110.1-110.4), calculate and add the TAB for the subject intangible asset.

70. Cost Approach

- 70.1. Under the cost approach, the value of an intangible asset is determined based on the replacement cost of a similar asset or an asset providing similar service potential or utility.
- 70.2. *Valuers must* comply with paras 60.2 and 60.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the cost approach to the valuation of intangible assets.
- 70.3. Consistent with these criteria, the cost approach is commonly used for intangible assets such as the following:
 - (a) acquired third-party software,
 - (b) internally-developed and internally-used, non-marketable software, and
 - (c) assembled workforce.
- 70.4. The cost approach may be used when no other approach is able to be applied; however, a valuer should attempt to identify an alternative method before applying the cost approach in situations where the subject asset does not meet the criteria in paras 60.2 and 60.3 of IVS 105 *Valuation Approaches and Methods*.
- 70.5. There are broadly two main methods that fall under the cost approach: replacement cost and reproduction cost. However, many intangible assets do not have physical form that can be reproduced and assets such as software, which can be reproduced, generally derive value from their function/utility rather than their exact lines of code. As such, the replacement cost is most commonly applied to the valuation of intangible assets.
- 70.6. The replacement cost method assumes that a participant would pay no more for the asset than the cost that would be incurred to replace the asset with a substitute of comparable utility or functionality.

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- 70.7. *Valuers should consider the following when applying the replacement cost method:*
- (a) the direct and indirect costs of replacing the utility of the *asset*, including labour, materials and overhead,
 - (b) whether the subject intangible *asset* is subject to obsolescence. While intangible assets do not become functionally or physically obsolete, they can be subject to economic obsolescence,
 - (c) whether it is appropriate to include a profit mark-up on the included *costs*. An *asset* acquired from a third party would presumably reflect their *costs* associated with creating the *asset* as well as some form of profit to provide a return on investment. As such, under *bases of value* (see IVS 104 *Bases of Value*) that assume a hypothetical transaction, it *may* be appropriate to include an assumed profit mark-up on *costs*. As noted in IVS 105 *Valuation Approaches and Methods*, *costs* developed based on estimates from third parties would be presumed to already reflect a profit mark-up, and
 - (d) opportunity costs *may* also be included, which reflect *costs* associated with not having the subject intangible asset in place for some period of time during its creation.

80. Special Considerations for Intangible Assets

- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of intangible assets.
- (a) *Discount Rates/Rates of Return for Intangible Assets* (section 90).
 - (b) *Intangible Asset Economic Lives* (section 100).
 - (c) *Tax Amortisation Benefit* (section 110).

90. Discount Rates/Rates of Return for Intangible Assets

- 90.1. Selecting *discount rates* for intangible assets can be challenging as observable market evidence of *discount rates* for intangible assets is rare. The selection of a *discount rate* for an intangible *asset* generally requires *significant* professional judgment.
- 90.2. In selecting a *discount rate* for an intangible *asset*, *valuers should* perform an assessment of the risks associated with the subject intangible *asset* and consider observable *discount rate* benchmarks.
- 90.3. When assessing the risks associated with an intangible *asset*, a *valuer should* consider factors including the following:
- (a) intangible assets often have higher risk than tangible *assets*,
 - (b) if an intangible *asset* is highly specialised to its current use, it *may* have higher risk than *assets* with multiple potential uses,
 - (c) single intangible assets *may* have more risk than groups of *assets* (or businesses),

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- (d) intangible assets used in risky (sometimes referred to as non-routine) functions *may* have higher risk than intangible assets used in more low-risk or routine activities. For example, intangible assets used in research and development activities *may* be higher risk than those used in delivering existing products or services,
 - (e) the life of the *asset*. Similar to other investments, intangible assets with longer lives are often considered to have higher risk, all else being equal,
 - (f) intangible assets with more readily estimable cash flow streams, such as backlog, *may* have lower risk than similar intangible assets with less estimable cash flows, such as customer relationships.
- 90.4. Discount rate benchmarks are rates that are observable based on market evidence or observed transactions. The following are some of the benchmark rates that a *valuer* *should* consider:
- (a) risk-free rates with similar maturities to the life of the subject intangible *asset*,
 - (b) *cost* of debt or borrowing rates with maturities similar to the life of the subject intangible *asset*,
 - (c) *cost* of equity or equity rates or return for *participants* for the subject intangible *asset*,
 - (d) *weighted* average cost of capital (WACC) of *participants* for the subject intangible *asset* or of the company owning/using the subject intangible *asset*,
 - (e) in contexts involving a recent business acquisition including the subject intangible *asset*, the Internal Rate of Return (IRR) for the transaction *should* be considered, and
 - (f) in contexts involving a *valuation* of all *assets* of a business, the *valuer* *should* perform a *weighted* average return on *assets* (WARA) analysis to confirm reasonableness of selected *discount rates*.

100. Intangible Asset Economic Lives

- 100.1. An important consideration in the *valuation* of an intangible *asset*, particularly under the income approach, is the economic life of the *asset*. This *may* be a finite period limited by legal, technological, functional or economic factors; other *assets* *may* have an indefinite life. The economic life of an intangible *asset* is a different concept than the remaining useful life for accounting or tax *purposes*.
- 100.2. Legal, technological, functional and economic factors *must* be considered individually and together in making an assessment of the economic life. For example, a pharmaceutical technology protected by a patent *may* have a remaining legal life of five years before expiry of the patent, but a competitor drug with improved efficacy *may* be expected to reach the market in three years. This might cause the economic life of the patent to be assessed as only three years. In contrast, the expected economic life of the technology could extend beyond the life of the patent if the knowhow associated with the technology would have *value* in production of a generic drug beyond the expiration of the patent.

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100.3. In estimating the economic life of an intangible asset, a *valuer* *should* also consider the pattern of use or replacement. Certain intangible assets *may* be abruptly replaced when a new, better or cheaper alternative becomes available, while others *may* be replaced slowly over time, such as when a software developer releases a new version of software every year but only replaces a portion of the existing code with each new release.

100.4. For customer-related intangibles, attrition is a key factor in estimating an economic life as well as the cash flows used to value the customer-related intangibles. Attrition applied in the *valuation* of intangible assets is a quantification of expectations regarding future losses of customers. While it is a forward-looking estimate, attrition is often based on historical observations of attrition.

100.5. There are a number of ways to measure and apply historical attrition:

- (a) a constant rate of loss (as a percentage of prior year balance) over the life of the customer relationships *may* be assumed if customer loss does not appear to be dependent on age of the customer relationship,
- (b) a variable rate of loss *may* be used over the life of the customer relationships if customer loss is dependent on age of the customer relationship. In such circumstances, generally younger/new customers are lost at a higher rate than older, more established customer relationships,
- (c) attrition *may* be measured based on either revenue or number of customers/customer count as appropriate, based on the characteristics of the customer group,
- (d) customers *may* need to be segregated into different groups. For example, a company that sells products to distributors and retailers *may* experience different attrition rates for each group. Customers *may* also be segregated based on other factors such as geography, size of customer and type of product or service purchased, and
- (e) the period used to measure attrition *may* vary depending on circumstances. For example, for a business with monthly subscribers, one month without revenue from a particular customer would indicate a loss of that customer. In contrast, for larger industrial products, a customer might not be considered “lost” unless there have been no sales to that customer for a year or more.

100.6. The application of any attrition factor *should* be consistent with the way attrition was measured. Correct application of attrition factor in first projection year (and therefore all subsequent years) *must* be consistent with form of measurement.

- (a) If attrition is measured based on the number of customers at the beginning-of-period versus end-of-period (typically a year), the attrition factor *should* be applied using a “mid-period” convention for the first projection year (as it is usually assumed that customers were lost throughout the year). For example, if attrition is measured by looking at the number of customers at the beginning of the year (100) versus the number remaining at the end of the year (90), on average the company had 95 customers during that year, assuming they were lost evenly

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throughout the year. Although the attrition rate could be described as 10%, only half of that *should* be applied in the first year.

- (b) If attrition is measured by analysing year-over-year revenue or customer count, the resulting attrition factor *should* generally be applied without a mid-period adjustment. For example, if attrition is measured by looking at the number of customers that generated revenue in Year 1 (100) versus the number of those same customers that had revenue in Year 2 (90), application would be different even though the attrition rate could again be described as 10%.
- 100.7. Revenue-based attrition *may* include growth in revenue from existing customers unless adjustments are made. It is generally a best practice to make adjustments to separate growth and attrition in measurement and application.
- 100.8. It is a best practice for *valuers* to input historical revenue into the model being used and check how closely it predicts actual revenue from existing customers in subsequent years. If attrition has been measured and applied appropriately, the model *should* be reasonably accurate. For example, if estimates of future attrition were developed based on historical attrition observed from 20X0 through 20X5, a *valuer* *should* input the 20X0 customer revenue into the model and check whether it accurately predicts the revenue achieved from existing customers in 20X1, 20X2, etc
- 110. Tax Amortisation Benefit (TAB)**
- 110.1. In many tax *jurisdictions*, intangible assets can be amortised for tax *purposes*, reducing a taxpayer's tax burden and effectively increasing cash flows. Depending on the *purpose* of a *valuation* and the valuation *method* used, it *may* be appropriate to include the *value* of TAB in the *value* of the intangible.
 - 110.2. If the market or cost approach is used to value an intangible *asset*, the price paid to create or purchase the *asset* would already reflect the ability to amortise the *asset*. However, in the income approach, a TAB needs to be explicitly calculated and included, if appropriate.
 - 110.3. For some valuation *purposes*, such as financial reporting, the appropriate *basis of value* assumes a hypothetical sale of the subject intangible *asset*. Generally, for those *purposes*, a TAB *should* be included when the income approach is used because a typical *participant* would be able to amortise an intangible *asset* acquired in such a hypothetical transaction. For other valuation *purposes*, the assumed transaction might be of a business or group of *assets*. For those *bases of value*, it *may* be appropriate to include a TAB only if the transaction would result in a step-up in basis for the intangible assets.
 - 110.4. There is some diversity in practice related to the appropriate *discount rate* to be used in calculating a TAB. *Valuers* *may* use either of the following:
 - (a) a *discount rate* appropriate for a business utilising the subject *asset*, such as a *weighted average cost of capital*. Proponents of this view believe that, since amortisation can be used to offset the taxes on any income produced by the business, a *discount rate* appropriate for the business as a whole *should* be used, or

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(b) a *discount rate* appropriate for the subject *asset* (ie, the one used in the *valuation* of the *asset*). Proponents of this view believe that the *valuation* *should* not assume the owner of the subject *asset* has operations and income separate from the subject *asset* and that the *discount rate* used in the TAB calculation *should* be the same as that used in the *valuation* of the subject *asset*.

*Asset Standards***IVS 220 Non-Financial Liabilities**

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of non-financial liabilities and *valuations* with a non-financial liability component. This standard contains additional requirements that apply to *valuations* of non-financial liabilities.
- 10.2. With regard to the determination of *discount rates* and risk margins, in circumstances in which IVS 105 *Valuation Approaches and Methods* (see paras 50.29-50.31) conflicts with IVS 220 *Non-Financial Liabilities*, *valuers must* apply the principles in sections 90 and 100 of this Standard in *valuations* of non-financial liabilities.

20. Introduction

- 20.1. For purposes of IVS 220 *Non-Financial Liabilities*, non-financial liabilities are defined as those liabilities requiring a non-cash performance obligation to provide goods or services.
- 20.2. A non-exhaustive list of liabilities that *may* in part or in full require a non-cash fulfilment and be subject to IVS 220 *Non-Financial Liabilities* includes: deferred revenue or contract liabilities, warranties, environmental liabilities, asset retirement obligations, certain contingent consideration obligations, loyalty programmes, power purchase agreements, certain litigation reserves and contingencies, and certain indemnifications and guarantees.
- 20.3. Although certain contingent consideration liabilities *may* require a non-cash performance obligation, such liabilities are not included in the scope of IVS 220 *Non-Financial Liabilities*.
- 20.4. The party assuming a non-financial liability typically requires a profit margin on the fulfilment effort to compensate for the effort incurred and risk borne for the delivery of goods or services.

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- 20.5. For financial liabilities, cash fulfilment is typically the only performance obligation and no additional compensation is needed for the fulfilment effort. Given that cash fulfilment is the only performance obligation for financial liabilities, asset-liability symmetry most often enables *valuers* to assess the subject liability using an asset framework.
- 20.6. Asset-liability symmetry typically does not exist for non-financial liabilities due to the performance obligation to provide goods and services to satisfy the liability and additional compensation for such effort. As such, non-financial liabilities will most often be valued using a liability framework.
- 20.7. In instances in which a corresponding *asset* is recognised by the counterparty, the *valuer* *must* assess if the *values* would reflect asset-liability symmetry under circumstances consistent with the *basis of value*. Certain *bases of value* issued by entities/organisations other than the IVSC require the specific consideration and reconciliation to a corresponding *asset* under certain circumstances. The *valuer* *must* understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the valuation date (see IVS 200 *Businesses and Business Interests*, para 30.2). Instances in which the *valuer* *should* reconcile to a corresponding asset value will be rare, reasons include:
 - (a) Non-financial liabilities often do not have a recorded corresponding *asset* recognised by the counterparty (eg, environmental liability), or can only be transferred in conjunction with another *asset* (eg, an automobile and related warranty are only transferred together).
 - (b) The corresponding *asset* of a non-financial liability *may* be held by numerous parties for which it is impractical to identify and reconcile the asset values.
 - (c) The market for the non-financial *asset* and liability is often highly illiquid, thus resulting in asymmetric information, high bid ask spreads, and asset-liability asymmetry.
- 20.8. *Participants* that most often transact in the subject non-financial liability *may* not be the comparable companies and competitors of the entity holding the subject non-financial liability. Examples include insurance companies, third party warranty issuers, and more. *The valuer* *should* consider if a market, or *participants*, exist outside the immediate industry in which the entity holding the subject non-financial liability operates.
- 20.9. Non-financial liability valuations are performed for a variety of *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation* and whether the non-financial liabilities *should* be valued, whether separately or grouped with other *assets*. A non-exhaustive list of examples of circumstances that commonly include a non-financial liability valuation component is provided below:
 - (a) For financial reporting *purposes*, *valuations* of non-financial liabilities are often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis.
 - (b) For tax reporting *purposes*, non-financial liability valuations are often needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses.

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(c) Non-financial liabilities *may* be the subject of litigation, requiring *valuation* analysis in certain circumstances.

(d) *Valuers* are sometimes asked to value non-financial liabilities as part of general consulting, collateral lending and transactional support engagements.

30. Bases of Value

- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate *basis(es) of value* when valuing non-financial liabilities.
- 30.2. Often, non-financial liability valuations are performed using *bases of value* defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 104 *Bases of Value*) and the *valuer must* understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the valuation date (see IVS 200 *Businesses and Business Interests*, para 30.2).

40. Valuation Approaches and Methods

- 40.1. Elements of the three valuation approaches described in IVS 105 *Valuation Approaches* (market, income and cost approach) can all be applied to the *valuation* of non-financial liabilities. The methods described below *may* exhibit elements of more than one approach. If it is necessary for the *valuer* to classify a method under one of the three approaches, the *valuer should* use judgement in making the determination and not necessarily rely on the classification below.
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches*, including para 10.3.

50. Market Approach

- 50.1. Under the market approach, the *value* of a non-financial liability is determined by reference to market activity (for example, transactions involving identical or similar non-financial liabilities).
- 50.2. Transactions involving non-financial liabilities frequently also include other *assets*, such as a business combinations that include tangible and intangible *assets*.
- 50.3. Transactions involving standalone non-financial liabilities are infrequent as compared with transactions for businesses and *assets*.
- 50.4. While standalone transactions of non-financial liabilities are infrequent, *valuers should* consider relevant market-based indications of *value*. Although such market-based indications *may* not provide sufficient information with which to apply the market approach, the use of market-based inputs *should* be maximised in the application of other approaches.
- 50.5. A non-exhaustive list of such market indications of *value* includes:
- (a) Pricing from third parties to provide identical or similar products as the subject non-financial liability (eg, deferred revenue),
 - (b) Pricing for warranty policies issued by third parties for identical or similar obligations,

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- (c) The prescribed monetary conversion amount as published by participants for certain loyalty reward obligations,
 - (d) The traded price for contingent value rights (CVRs) with similarities to the subject non-financial liability (eg, contingent consideration),
 - (e) Observed rates of return for investment funds that invest in non-financial liabilities (eg, litigation finance).
- 50.6. *Valuers must* comply with paras 20.2 and 20.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the market approach to the *valuation* of non-financial liabilities.
- 50.7. The diverse nature of many non-financial liabilities and the fact that non-financial liabilities seldom transact separately from other *assets* means that it is rarely possible to find market evidence of transactions involving similar non-financial liabilities.
- 50.8. Where evidence of market prices is available, *valuers should* consider adjustments to these to reflect differences between the subject non-financial liability and those involved in the transactions. These adjustments are necessary to reflect the differentiating characteristics of the subject non-financial liability and those involved in the transactions. Such adjustments *may* only be determinable at a qualitative, rather than quantitative, level. However, the need for *significant* qualitative adjustments could indicate that another approach would be more appropriate for the *valuation*.
- 50.9. In certain instances a *valuer may* rely on market prices or evidence for an *asset* corresponding to the subject non-financial liability. In such instances, the *valuer should* consider an entity's ability to transfer the subject non-financial liability, whether the *asset* and related price of the *asset* reflect those same restrictions, and whether adjustments to reflect the restrictions *should* be included. The *valuer should* take care to determine if the transfer restrictions are characteristics of the subject non-financial liability (for example, an illiquid market) or restrictions that are characteristics of the entity (for example, financial distress).
- 50.10. The comparable transaction method, also known as the guideline transactions method, is generally the only market approach method that can be applied to value non-financial liabilities.
- 50.11. In rare circumstances, a security sufficiently similar to a subject non-financial liability could be publicly traded, allowing the use of the guideline public company method. One example of such securities is contingent value rights that are tied to the performance of a particular product or technology.

Market Approach Methods

- 50.12. A method to value non-financial liabilities under the Market Approach is often referred to as the Top-Down Method.

Top-Down Method

- 50.13. Under the Top-Down Method, valuing non-financial liabilities is based on the premise that reliable market-based indications of pricing are available for the performance obligation.

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- 50.14. A *participant* fulfilling the obligation to deliver the product or services associated with the non-financial liability could theoretically price the liability by deducting *costs* already incurred toward the fulfilment obligation, plus a mark-up on those *costs*, from the market price of services.
- 50.15. When market information is used to determine the *value* of the subject non-financial liability, discounting is typically not necessary because the effects of discounting are incorporated into observed market prices.
- 50.16. The key steps in applying a Top-Down Method are to:
- Determine the market price of the non-cash fulfilment.
 - Determine the *costs* already incurred and *assets* utilised by the transferor. The nature of such *costs* will differ depending on the subject non-financial liability. For example, for deferred revenue the *costs* will primarily consist of sales and marketing costs that have already been incurred in generating the non-financial liability.
 - Determine a reasonable profit margin on the *costs* already incurred.
 - Subtract *costs* incurred and profit from the market price.

60. Income Approach

- 60.1. Under the income approach, the *value* of a non-financial liability is often determined by reference to the present value of the *costs* to fulfil the obligation plus a profit margin that would be required to assume the liability.
- 60.2. *Valuers must* comply with paras 40.2 and 40.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the income approach to the *valuation* of non-financial liabilities.

Income Approach Methods

- 60.3. The primary method to value non-financial liabilities under the Income Approach is often referred to as the Bottom-Up Method.

Bottom-Up Method

- 60.4. Under the Bottom-Up Method, the non-financial liability is measured as the *costs* (which *may* or *may not* include certain overhead items) required to fulfil the performance obligation, plus a reasonable mark-up on those *costs*, discounted to present value.
- 60.5. The key steps in applying a Bottom-Up Method are to:
- Determine the *costs* required to fulfil the performance obligation. Such *costs* will include the direct costs to fulfil the performance obligation, but *may also* include indirect costs such as charges for the use of contributory *assets*. Fulfilment costs represent those *costs* that are related to fulfilling the performance obligation that generates the non-financial liability. Costs incurred as part of the selling activities before the acquisition date *should* be excluded from the fulfilment effort.
 - Contributory asset charges *should* be included in the fulfilment costs when such *assets* would be required to fulfil the obligation and the related cost is not otherwise captured in the income statement.

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2. In limited instances, in addition to direct and indirect costs, it *may* be appropriate to include opportunity costs. For example, in the licensing of symbolic intellectual property, the direct and indirect costs of fulfilment *may* be nominal. However, if the obligation reduces the ability to monetise the underlying *asset* (in an exclusive licensing arrangement for example), then the *valuer* *should* consider how *participants* would account for the potential opportunity costs associated with the non-financial liability.
- (b) Determine a reasonable mark-up on the fulfilment effort. In most cases it *may* be appropriate to include an assumed profit margin on certain *costs* which can be expressed as a target profit, either a lump sum or a percentage return on *cost* or *value*. An initial starting point *may* be to utilise the operating profit of the entity holding the subject non-financial liability. However, this methodology assumes the profit margin would be proportional to the *costs* incurred. In many circumstances there is rationale to assume profit margins which are not proportional to *costs*. In such cases the risks assumed, *value* added, or intangibles contributed to the fulfilment effort are not the same as those contributed pre-measurement date. When *costs* are derived from actual, quoted or estimated prices by third party suppliers or contractors, these *costs* will already include a third party's desired level of profit.
- (c) Determine timing of fulfilment and discount to present value. The *discount rate* *should* account for the time value of money and non-performance risk. Typically it is preferable to reflect the impact of uncertainty such as changes in anticipated fulfilment costs and fulfilment margin through the cash flows, rather than in the *discount rate*.
- (d) When fulfilment *costs* are derived through a percent of revenue, *valuers* *should* consider whether the fulfilment *costs* already implicitly include the impact of discounting. For example, prepayment for services *may* result in a discount as one would expect to pay less for the same service as compared with paying throughout the contract term. As a result, the derived *costs* *may* also contain an implicit discount and further discounting *may* not be necessary.

70. Cost Approach

- 70.1. The cost approach has limited application for non-financial liabilities as *participants* typically expect a return on the fulfilment effort.
- 70.2. *Valuers* *must* comply with paras 60.2 and 60.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the cost approach to the *valuation* of non-financial liabilities.

80. Special Considerations for Non-Financial Liabilities

- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of non-financial liabilities.
 - (a) *Discount Rates* for Non-Financial Liabilities (section 90)
 - (b) Estimating Cash Flows and Risk Margins (section 100)
 - (c) Restrictions on Transfer (section 110)
 - (d) Taxes (section 120)

Asset Standards**90. Discount Rates for Non-Financial Liabilities**

- 90.1. A fundamental basis for the income approach is that investors expect to receive a return on their investments and that such a return *should* reflect the perceived level of risk in the investment.
- 90.2. The *discount rate* *should* account for the time value of money and non-performance risk. Non-performance risk is typically a function of counterparty risk (ie, credit risk of the entity obligated to fulfil the liability) (see para 60.5c of this Standard).
- 90.3. Certain *bases of value* issued by entities/organisations other than the IVSC *may* require the *discount rate* to specifically account for liability specific risks. The *valuer* *must* understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the valuation date (see IVS 200 *Businesses and Business Interests*, para 30.2).
- 90.4. *Valuers* *should* consider the term of the subject non-financial liability when determining the appropriate inputs for the time value of money and non-performance risk.
- 90.5. In certain circumstances, the *valuer* *may* explicitly adjust the cash flows for non-performance risk.
- 90.6. What a *participant* would have to pay to borrow the funds necessary to satisfy the obligation *may* provide insights to help quantify the non-performance risk.
- 90.7. Given the long-term nature of certain non-financial liabilities, the *valuer* *must* consider if inflation has been incorporated into the estimated cash flows, and *must* ensure that the *discount rate* and cash flow estimates are prepared on a consistent basis.

100. Estimating Cash Flows and Risk Margins

- 100.1. The principles contained in IVS 105 *Valuation Approaches and Methods* *may* not apply to *valuations* of non-financial liabilities and *valuations* with a non-financial liability component (see IVS 105 *Valuation Approaches and Methods*, paras 50.12-50.19). *Valuers* *must* apply the principles in sections 90 and 100 of this Standard in *valuations* of non-financial liabilities.
- 100.2. Non-financial liability cash flow forecasts often involve the explicit modelling of multiple scenarios of possible future cash flow to derive a probability-weighted expected cash flow forecast. This method is often referred to as the Scenario-Based Method (SBM). The SBM also includes certain simulation techniques such as the Monte Carlo simulation. The SBM is commonly used when future payments are not contractually defined but rather vary depending upon future events. When the non-financial liability cash flows are a function of systematic risk factors, the *valuer* *should* consider the appropriateness of the SBM, and *may* need to utilise other methods such as option pricing models (OPMs).
- 100.3. Considerations in estimating cash flows include developing and incorporating explicit assumptions, to the extent possible. A non-exhaustive list of such assumptions *may* include:
 - (a) The *costs* that a third party would incur in performing the tasks necessary to fulfil the obligation,

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- (b) Other amounts that a third party would include in determining the *price* of the transfer, including, for example, inflation, overhead, equipment charges, profit margin, and advances in technology,
 - (c) The extent to which the amount of a third party's *costs* or the timing of its *costs* would vary under different future scenarios and the relative probabilities of those scenarios, and,
 - (d) The *price* that a third party would demand and could expect to receive for bearing the uncertainties and unforeseeable circumstances inherent in the obligation.
- 100.4. While expected cash flows (ie, the probability-weighted average of possible future cash flows) incorporate the variable expected outcomes of the *asset's* cash flows, they do not account for the compensation that *participants* demand for bearing the uncertainty of the cash flows. For non-financial liabilities, forecast risk *may* include uncertainty such as changes in anticipated fulfilment costs and fulfilment margin. The compensation for bearing such risk *should* be incorporated into the expected payoff through a cash flow risk margin or the *discount rate*.
- 100.5. Given the inverse relationship between the *discount rate* and *value*, the *discount rate* *should* be decreased to reflect the impact of forecast risk (ie, the compensation for bearing risk due to uncertainty about the amount and timing of cash flows).
- 100.6. While possible to account for forecast risk by reducing the *discount rate*, given its limited practical application, the *valuer must* explain the rationale for reducing the *discount rate* rather than incorporating a risk margin, or specifically note the regulation, case law, or other interpretive guidance that requires the accounting for forecast risk of non-financial liabilities through the *discount rate* rather than a risk margin (see IVS 200 *Businesses and Business Interests*, para 30.2).
- 100.7. In developing a risk margin, a *valuer must*:
- (a) document the method used for developing the risk margin, including support for its use, and,
 - (b) provide evidence for the derivation of the risk margin, including the identification of the significant inputs and support for their derivation or source.
- 100.8. In developing a cash flow risk margin, a *valuer must* consider:
- (a) the life/term and/or maturity of the *asset* and the consistency of inputs,
 - (b) the geographic location of the *asset* and/or the location of the markets in which it would trade,
 - (c) the currency denomination of the projected cash flows, and
 - (d) the type of cash flow contained in the forecast, for example, a cash flow forecast *may* represent expected cash flows (ie, probability-weighted scenarios), most likely cash flows, contractual cash flows, etc
- 100.9. In developing a cash flow risk margin, a *valuer should* consider:

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- (a) the less certainty there is in the anticipated fulfilment costs and fulfilment margin, the higher the risk margin *should* be,
 - (b) given the finite term of most non-financial liabilities, as opposed to indefinite for many business and asset valuations, to the extent that emerging experience reduces uncertainty, risk margins *should* decrease, and vice versa,
 - (c) the expected distribution of outcomes, and the potential for certain non-financial liabilities to have high 'tail risk' or severity. Non-financial liabilities with wide distributions and high severity *should* have higher risk margins,
 - (d) the respective rights and preferences of the non-financial liability, and/or related *asset*, in the event of a liquidation and its relative position within the liquidation waterfall.
- 100.10. The cash flow risk margin *should* be the compensation that would be required for a party to be indifferent between fulfilling a liability that has a range of possible outcomes, and one that will generate fixed cash outflows.
- 100.11. A *valuer* need not conduct an exhaustive quantitative process, but *should* take into account all the information that is reasonably available.

110. Restrictions on Transfer

- 110.1. Non-financial liabilities often have restrictions on the ability to transfer. Such restrictions can be either contractual in nature, or a function of an illiquid market for the subject non-financial liability.
- 110.2. When relying on market evidence, a *valuer* *should* consider an entity's ability to transfer such non-financial liabilities and whether adjustments to reflect the restrictions *should* be included. The *valuer* *may* need to determine if the transfer restrictions are characteristics of the non-financial liability or restrictions that are characteristics of an entity, as certain *basis of value* *may* specify one or the other be considered (see IVS 220 *Non-Financial Liabilities*, para 50.9).
- 110.3. When relying on an income approach in which the non-financial liability value is estimated through a fulfilment approach, the *valuer* *should* determine if an investor would require an additional risk margin to account for the limitations on transfer.

120. Taxes

- 120.1. *Valuers* *should* use pre-tax cash flows and a pre-tax *discount rate* for the *valuation* of non-financial liabilities.
- 120.2. In certain circumstances, it *may* be appropriate to perform the analysis with after tax cash flows and *discount rates*. In such instances, the *valuer* *must* explain the rationale for use of after tax inputs, or specifically note the regulation, case law, or other interpretive guidance that requires the use of after tax inputs (see IVS 200 *Businesses and Business Interests*, para 30.2).
- 120.3. If after tax inputs are used, it *may* be appropriate to include the tax benefit created by the projected cash outflow associated with the non-financial liability.

IVS 230 Inventory

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of inventory and *valuations* with an inventory component. This standard contains additional requirements for *valuations* of inventory.

20. Introduction

- 20.1. Inventory broadly includes goods which will be used in future production processes (ie, raw materials, parts, supplies), goods used in the production process (ie, work-in-process), and goods awaiting sale (ie, finished goods).
- 20.2. This standard focuses on *valuation* of inventory of physical goods that are not real property, as the numerous and varied aspects of real property inventory were not considered or contemplated in the preparation of this standard. The *valuation* of real property is covered in IVS 400 *Real Property Interests*.
- 20.3. While the book value of inventory only includes historical costs, the profits earned in the production process, which reflect returns on the *assets* utilised in manufacturing (including working capital, property, plant, and equipment, and intangible assets), are not capitalised into book value. As a result, the *market value* of inventory typically differs from, and is usually higher than, the book value of inventory.
- 20.4. As inventory is seldom transacted at an interim stage (eg, work-in-process) or *may* not be frequently sold to a third party to conduct the selling effort (eg, finished goods sold via distributor networks), the valuation techniques and considerations for inventory frequently vary from those of other *assets*.
- 20.5. Inventory valuations are performed for a variety of *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation* and whether the inventory *should* be valued, whether separately or grouped with other

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assets. A non-exhaustive list of examples of circumstances that commonly include an inventory valuation component is provided below:

- (a) For financial reporting *purposes*, *valuations* of inventory are often required in connection with accounting for business combinations, asset acquisitions and sales, and impairment analysis.
- (b) For tax reporting *purposes*, inventory valuations are frequently needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses.
- (c) Inventory valuation *may* be the subject of litigation, requiring valuation analysis in certain circumstances.
- (d) *Valuers* are sometimes asked to value inventory as part of general consulting, collateral lending, transactional support engagements and insolvency.

30. Bases of Value

- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate *basis(es) of value* when valuing inventory.
- 30.2. Often, inventory valuations are performed using *bases of value* defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 104 *Bases of Value*) and the *valuer must* understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the valuation date.

40. Valuation Approaches and Methods

- 40.1. The three valuation approaches described in IVS 105 *Valuation Approaches* can all be applied to the *valuation* of inventory. The methods described below simultaneously exhibit elements of the cost approach, market approach, and income approach. If necessary for the *valuer* to classify a method under one of the three approaches, the *valuer should* use judgement in making the determination and not necessarily rely on the classification below.
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches*, including para 10.3.

50. Market Approach

- 50.1. The market approach, ie, reference to market activity involving identical or similar goods, has only narrow direct application for the *valuation* of inventory. Such applications typically include 1) inventory of commoditised products, or 2) inventory in which a market exists for the inventory at an interim stage in the production process. For non-commodity traded products or products that a market exists at an interim production stage, such selling prices *must* be adjusted downward to account for the disposal effort and related profit.
- 50.2. While the market approach is not directly applicable in most instances, *valuers should* consider market-based indications to determine the selling price as an input for other methods.

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- 50.3. Other observable markets *may* provide insights on the returns attributable to the manufacturing and disposition of assets that can also be leveraged for inputs into other methods. Such returns are typically considered to exclude returns attributable to intellectual property. For example:
- (a) Distributor profit margins represent a meaningful market proxy for returns on the disposition process, if an appropriate base of comparable companies is identified.
 - (b) Contract manufacturers, to the extent available, *may* provide a proxy for margins earned through the manufacturing process.
- 50.4. *Valuers must* comply with paras 20.2 and 20.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the market approach to the *valuation* of inventory. In addition, *valuers should* only apply the market approach to value inventory if both of the following criteria are met:
- (a) information is available on arm's length transactions involving identical or similar inventory on or near the valuation date, and
 - (b) sufficient information is available to allow the *valuer* to adjust for all *significant* differences between the *subject* inventory and those involved in the transactions.
- 50.5. Where evidence of market prices is available, *valuers should* make adjustments to these to reflect differences between the *subject* inventory and those involved in the transactions. These adjustments are necessary to reflect the differentiating characteristics of the *subject* inventory and those involved in the transactions. Such adjustments may only be determinable at a qualitative, rather than quantitative, level. However, the need for *significant* qualitative adjustments *may* indicate that another approach would be more appropriate for the *valuation* (see IVS 105 *Valuation Approaches and Methods*, paras 10.1-10.10).

60. Income Approach

- 60.1. The *valuation* of inventory using the income approach requires the allocation of profit (value) contributed pre-valuation date versus the profit (value) contributed post-valuation date.
- 60.2. *Valuers must* comply with paras 40.2 and 40.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the income approach to the *valuation* of inventory.

Top-Down Method

- 60.3. The top-down method is a residual method that begins with the estimated selling price and deducts remaining *costs* and estimated profit.
- 60.4. The top-down method attempts to bifurcate the efforts, and related value, that were completed before the measurement date versus those efforts that are to be completed after the measurement date.
- 60.5. The key steps in applying the top-down method are to:
- (a) Estimate the selling price. The *valuer* *should* rely on direct observations of selling prices when the information is available. However, such data is

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often not available and the selling price is often estimated by applying an appropriate gross profit margin to the net book value of finished goods at the product level or aggregate level. Typically, the projected gross profit margin in the period the inventory will be sold is used.

- (b) Estimate the *costs to complete* (for work-in-process only). Completion costs *should* include all of the expenditures directly or indirectly remaining to be incurred post-valuation date in bringing the work in progress inventory to its finished condition. *Costs to complete* *should* be adjusted to remove expenses benefitting future periods.
 - (c) Subtract the *costs of disposal*. *Costs of disposal* represent *costs* that would be incurred post-valuation date in order to deliver the finished goods to the end customer. *Costs of disposal* *should* be adjusted to remove expenses benefitting future periods. Disposal costs generally include selling and marketing expenses while procurement and manufacturing expenses have typically already been incurred for finished goods inventory. In order to properly determine *costs of disposal*, each expense in the inventory cycle (including indirect overhead) *should* be categorised as having been incurred and, therefore, contributed to the *value* of the finished goods inventory or remaining to be incurred during the disposal process.
 - (d) Subtract the profit allowance on the completion effort (for work-in-process only) and the disposal process. An initial starting point *may* be to utilise the operating profit of the company. However, this methodology assumes the profit margin would be proportional to the *costs* incurred. In most circumstances there is rationale to assume profit margins which are not proportional to *costs* (see section 90).
 - (e) Consider any necessary holding costs. Holding costs *may* need to be estimated in order to account for the opportunity cost associated with the time required to sell the inventory. Additionally, the *valuer* *should* consider the risk born during the holding period when determining the required rate of return. Risks *may* be a function of the length of inventory life cycle and the contractual arrangements with end customers (eg, manufacturer bears the risk of fluctuation in *costs* of completion and disposal). Holding costs *may* be immaterial if the inventory turnover is high and/or the borrowing rate is low.
- 60.6. When determining the *cost to complete*, *costs of disposal* and profit allowance, the *valuer* *should* identify and exclude any expenses that are intended to provide future economic benefit and are not necessary to generate the current period revenue. Examples of future-benefit expenses *may* include research and development (R&D) related to new product development; marketing for a new product; recruiting to increase the size of the workforce; expansion into a new territory; depreciation of an R&D facility dedicated to future research; or restructuring costs.
- 60.7. Internally developed intangible assets *should* either be modelled as 1) a *cost* as if they were hypothetically licensed, and therefore included in either the *cost of production* or *disposal*, or 2) considered as part of a functional apportionment when determining the appropriate profit allowance.
- 60.8. When utilising the top-down method, *valuers* *should* consider whether sufficient data are available to appropriately apply the key steps. If sufficient

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data is not available, it *may* be appropriate to apply other methods or techniques.

- 60.9. The *valuer* *may* use the bottom-up method (see para 60.10) to corroborate the *value* derived from the top-down method (see paras 60.3 to 60.9).

Bottom-Up Method

- 60.10. The key steps in applying the bottom-up method are to:

- (a) Determine the book value of the *subject* inventory. The book value *may* need to be adjusted for multiple considerations (see para 70.4 and section 110).
- (b) Add any *cost* of buying and holding already incurred.
- (c) Add any *cost* toward completion already incurred. Such *costs* typically include procurement and manufacturing expenses
- (d) Add profit on total *costs* already incurred. An initial starting point *may* be to utilise the operating profit of the company. However, this methodology assumes the profit margin would be proportional to the *costs* incurred. In most circumstances there is rationale to assume profit margins which are not proportional to *costs* (see section 90).

- 60.11. When determining the *costs* already incurred, *valuers* *should* consider internally developed intangible assets that have contributed toward the completion effort.

70. Cost Approach

- 70.1. The primary method to value inventory is the replacement cost method. Raw materials inventory is typically valued using the current replacement cost method.
- 70.2. *Valuers* *must* comply with paras 60.2 and 60.3 of IVS 105 *Valuation Approaches and Methods* when determining whether to apply the cost approach to the *valuation* of inventory.

Current Replacement Cost Method

- 70.3. The current replacement cost method (CRCM) *may* provide a good indication of *market value* if inventory is readily replaceable in a wholesale or retail business (eg, raw materials inventory).
- 70.4. The *market value* of raw materials and other inventory *may* be similar to the net book value as of the valuation date but certain adjustments *should* be considered.
- (a) The book value *may* need to be adjusted to FIFO basis.
 - (b) If raw material prices fluctuate and/or the inventory turnover is slow the book value *may* need to be adjusted for changes in market prices.
 - (c) The book value of raw materials *may* also be decreased to account for obsolete and defective goods.

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- (d) The book value *may* also need to be decreased for shrinkage, which is the difference between inventory listed in the accounting records and the actual inventory due to theft, damage, miscounting, incorrect units of measure, evaporation, etc.
- (e) The book value *may* need to be increased for any *costs* incurred in connection with raw material preparation (eg, purchasing, storage and handling).

80. Special Considerations for Inventory

- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of inventory.

- (a) Identification of value-added processes and returns on intangible assets (section 90).
- (b) Relationship to other acquired assets (section 100).
- (c) Obsolete inventory – reserves (section 110).
- (d) Unit of account (section 120)

90. Identification of Value-Added Processes and Returns on Intangible Assets

- 90.1. The *valuation* of inventory involves an allocation of profit between the profit earned pre-measurement date and the profit earned post-measurement date. In practice, profit earned *may* not be proportional to expenses. In most cases the risks assumed, value added, or intangibles contributed to the inventory pre-measurement date are not the same as those contributed post-measurement date.
- 90.2. *Valuers* typically *should* not simply allocate profit in proportion to disposition and manufacturing costs. This assumption can misallocate profit, as it presupposes that a company's production process earns profit on a pro-rata basis based on *costs* incurred. For manufacturers, this method is inappropriate if the *costs* of materials represent an initial outflow without significant efforts. Such an assumption also fails to recognise the contribution of internally-generated intangible assets with minimal associated costs.
- 90.3. *Valuers* *should* distinguish between value-added costs and those that are not value-added. The materials portion of COGS may not be a value-added cost because it does not contribute any of the profit to the inventory.
- 90.4. For a company that owns internally developed intangible assets that contribute to an increase in the level of profitability, the return on and of those intangible assets would be included in the total profit margin of the business. However, whether intangible assets are owned or licensed, the *market value* of the inventory *should* be the same.
- 90.5. The *valuer* *should* determine the extent to which the technology, trademarks, and customer relationships support the manufacturing and distribution processes and whether the returns are applicable to the entire base of revenue. If the intangible asset has been utilised to create the inventory (eg, a manufacturing process intangible), then the *value* of the inventory would

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be increased. Conversely, if the intangible asset is expected to be utilised in the future, at the time of disposal, the *value* of the inventory would be decreased.

- 90.6. For marketing intangibles, the determination of whether the intangible is an attribute of the inventory *may* be difficult. To assist with the determination, the *valuer* *may* consider how the inventory would be marketed by a market *participant* to its customers – pull vs push model. A push model requires significant disposal efforts for inventory and is less reliant on marketing intangibles, while a pull model depends on strong brand development and recognition to pull customers to the product.
- 90.7. A non-exhaustive list of other considerations for evaluating when intangible assets are contributed *may* include the amount of marketing spend, whether products are sold through a distributor, level of attrition for customer relationships, and any legal rights associated with the intangible assets.
- 90.8. In some cases, the intangible asset may consist of several elements that contribute to various aspects of the value creation, such as a pharmaceutical product intangible asset that is comprised of technology and trademark. This requires an assessment of how the overall profit related to each element of the intangible asset *should* be apportioned to manufacturing the inventory versus in the disposal effort.
- 90.9. Similarly, although a single intangible asset may only contribute to either the manufacturing or disposal effort, it is possible for a portion of the intangible to be contributed pre-measurement date and a portion contributed post-measurement date. For example, when assessing the contribution of symbolic IP for finished goods, although the product bears the respective branding associated with the symbolic IP, the related right to sell the branded product *may* not be conveyed with the transfer of inventory. As such, it *may* be appropriate to consider such rights in the *costs* of disposal.

100. Relationship to Other Acquired Assets

- 100.1. The *valuer* *should* maintain consistency, as appropriate, between assumptions used in the inventory valuation relative to *valuation* of other assets or liabilities.

110. Obsolete Inventory Reserves

- 110.1. The *valuer* *should* account for obsolete inventory reserve balances. The inventory reserve balances *should* be applied to the inventory in which the reserve applies, rather than netted against the entire inventory balance.
- 110.2. Typically, the obsolete inventory adjusted for the inventory reserve would not be valued as it has been adjusted to net realisable value. However, the *valuer* *may* need to consider further write-downs if *market value* is lower than net realisable value.

120. Unit of Account

- 120.1. For *purposes* of inventory valuation, it is often appropriate to assume inventory is one homogenous set of *assets*. However, it is possible for the profit margins, risk, and intangible asset contributions to vary by product or product group.

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- 120.2. If the profit margins, risk, and intangible asset contributions vary by product or product group, and the relative mix of inventory being valued does not match the assumed sales mix used to develop the assumptions for the *valuation*, the *valuer* should assess the different groups of inventory separately.

IVS 300 Plant and Equipment

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of plant and equipment. This standard only includes modifications, additional principles or specific examples of how the General Standards apply for *valuations* to which this standard applies.

20. Introduction

- 20.1. Items of plant and equipment (which *may* sometimes be categorised as a type of personal property) are tangible *assets* that are usually held by an entity for use in the manufacturing/production or supply of goods or services, for rental by others or for administrative *purposes* and that are expected to be used over a period of time.
- 20.2. For lease of machinery and equipment, the right to use an item of machinery and equipment (such as a right arising from a lease) would also follow the guidance of this standard. It *must* also be noted that the “right to use” an *asset* could have a different life span than the service life (that takes into consideration of both preventive and predictive maintenance) of the underlying machinery and equipment itself and, in such circumstances, the service life span *must* be stated.
- 20.3. *Assets* for which the highest and best use is “in use” as part of a group of *assets* *must* be valued using consistent assumptions. Unless the *assets* belonging to the sub-systems *may* reasonably be separated independently from its main system, then the sub-systems *may* be valued separately, having consistent assumptions within the sub-systems. This will also cascade down to sub-sub-systems and so on.
- 20.4. Intangible *assets* fall outside the classification of plant and equipment *assets*. However, an intangible *asset* *may* have an impact on the *value* of plant and equipment *assets*. For example, the *value* of patterns and dies is often inextricably linked to associated intellectual property rights. Operating software, technical data, production records and patents are further examples of intangible *assets* that can have an impact on the *value* of plant and equipment *assets*, depending on whether or not they are included in the *valuation*. In such cases, the valuation process will involve consideration

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of the inclusion of intangible assets and their impact on the valuation of the plant and equipment assets. When there is an intangible asset component, the valuer should also follow IVS 210 *Intangible Assets*.

- 20.5. A valuation of plant and equipment will normally require consideration of a range of factors relating to the asset itself, its environment and physical, functional and economic potential. Therefore, all plant and equipment valuers should normally inspect the subject assets to ascertain the condition of the plant and also to determine if the information provided to them is usable and related to the subject assets being valued. Examples of factors that may need to be considered under each of these headings include the following:

(a) Asset-related:

1. the asset's technical specification,
2. the remaining useful, economic or effective life, considering both preventive and predictive maintenance,
3. the asset's condition, including maintenance history,
4. any functional, physical and technological obsolescence,
5. if the asset is not valued in its current location, the costs of decommissioning and removal, and any costs associated with the asset's existing in-place location, such as installation and re-commissioning of assets to its optimum status,
6. for machinery and equipment that are used for rental purposes, the lease renewal options and other end-of-lease possibilities,
7. any potential loss of a complementary asset, eg, the operational life of a machine may be curtailed by the length of lease on the building in which it is located,
8. additional costs associated with additional equipment, transport, installation and commissioning, etc, and
9. in cases where the historical costs are not available for the machinery and equipment that may reside within a plant during a construction, the valuer may take references from the Engineering, Procurement, Construction ("EPC") contract.

(b) Environment-related:

1. the location in relation to the source of raw material and market for the product. The suitability of a location may also have a limited life, eg, where raw materials are finite or where demand is transitory,
2. the impact of any environmental or other legislation that either restricts utilisation or imposes additional operating or decommissioning costs,
3. radioactive substances that may be in certain machinery and equipment have a severe impact if not used or disposed of appropriately. This will have a major impact on expense consideration and the environment,

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- 4. toxic wastes which *may* be chemical in the form of a solid, liquid or gaseous state *must* be professionally stored or disposed of. This is critical for all industrial manufacturing, and
 - 5. licences to operate certain machines in certain countries *may* be restricted.
- (c) Economic-related:
- 1. the actual or potential profitability of the *asset* based on comparison of operating costs with earnings or potential earnings (see IVS 200 *Business and Business Interests*),
 - 2. the demand for the product manufactured by the plant with regard to both macro- and micro-economic factors could impact on demand, and
 - 3. the potential for the *asset* to be put to a more valuable use than the current use (ie, highest and best use).
- 20.6. *Valuations* of plant and equipment *should* reflect the impact of all forms of obsolescence on *value*.
- 20.7. To comply with the requirement to identify the *asset* or liability to be valued in IVS 101 *Scope of Work*, para 20.3.(d) to the extent it impacts on *value*, consideration *must* be given to the degree to which the *asset* is attached to, or integrated with, other *assets*. For example:
- (a) *assets* *may* be permanently attached to the land and could not be removed without substantial demolition of either the *asset* or any surrounding structure or building,
 - (b) an individual machine *may* be part of an integrated production line where its functionality is dependent upon other *assets*,
 - (c) an *asset* *may* be considered to be classified as a component of the real property (eg, a Heating, Ventilation and Air Conditioning System (HVAC)).
- In such cases, it will be necessary to clearly define what is to be included or excluded from the *valuation*. Any special assumptions relating to the availability of any complementary *assets* *must* also be stated (see also para 20.8).
- 20.8. Plant and equipment connected with the supply or provision of services to a building are often integrated within the building and, once installed, are not separable from it. These items will normally form part of the real property interest. Examples include plant and equipment with the primary function of supplying electricity, gas, heating, cooling or ventilation to a building and equipment such as elevators. If the *purpose* of the *valuation* requires these items to be valued separately, the scope of work *must* include a statement to the effect that the *value* of these items would normally be included in the real property interest and *may* not be separately realisable. When different valuation assignments are undertaken to carry out *valuations* of the real property interest and plant and equipment *assets* at the same location, care is necessary to avoid either omissions or double counting.

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- 20.9. Because of the diverse nature and transportability of many items of plant and equipment, additional assumptions will normally be required to describe the situation and circumstances in which the *assets* are valued. In order to comply with IVS 101 *Scope of Work*, para 20.3.(k) these *must* be considered and included in the scope of work. Examples of assumptions that *may* be appropriate in different circumstances include:
- (a) that the plant and equipment *assets* are valued as a whole, in place and as part of an operating business,
 - (b) that the plant and equipment *assets* are valued as a whole, in place but on the assumption that the business is not yet in production,
 - (c) that the plant and equipment *assets* are valued as a whole, in place but on the assumption that the business is closed,
 - (d) that the plant and equipment *assets* are valued as a whole, in place but on the assumption that it is a forced sale (See IVS 104 *Bases of Value*),
 - (e) that the plant and equipment *assets* are valued as individual items for removal from their current location.
- 20.10. In some circumstances, it *may* be appropriate to report on more than one set of assumptions, eg, in order to illustrate the effect of business closure or cessation of operations on the *value* of plant and equipment.
- 20.11. In addition to the minimum requirements in IVS 103 *Reporting*, a valuation report on plant and equipment *must* include appropriate references to matters addressed in the scope of work. The report *must* also include comment on the effect on the reported value of any associated tangible or intangible *assets* excluded from the actual or assumed transaction scenario, eg, operating software for a machine or a continued right to occupy the land on which the item is situated.
- 20.12. *Valuations* of plant and equipment are often required for different *purposes* including financial reporting, leasing, secured lending, disposal, taxation, litigation and insolvency proceedings.
- 30. Bases of Value**
- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer* *must* select the appropriate *basis(es)* of *value* when valuing plant and equipment.
- 30.2. Using the appropriate *basis(es)* of *value* and associated premise of *value* (see IVS 104 *Bases of Value*, sections 140-170) is particularly crucial in the *valuation* of plant and equipment because differences in *value* can be pronounced, depending on whether an item of plant and equipment is valued under an “*in use*” premise, orderly liquidation or forced liquidation (see IVS 104 *Bases of Value*, para 80.1). The *value* of most plant and equipment is particularly sensitive to different premises of *value*.
- 30.3. An example of forced liquidation conditions is where the *assets* have to be removed from a property in a timeframe that precludes proper marketing because a lease of the property is being terminated. The impact of such circumstances on *value* needs careful consideration. In order to advise on the *value* likely to be realised, it will be necessary to consider any alternatives to a sale from the current location, such as the practicality

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and cost of removing the items to another location for disposal within the available time limit and any diminution in *value* due to moving the item from its working location.

40. Valuation Approaches and Methods

- 40.1. The three principal valuation approaches described in the IVS *may* all be applied to the *valuation* of plant and equipment *assets* depending on the nature of the *assets*, the information available, and the facts and circumstances surrounding the *valuation*.

50. Market Approach

- 50.1. For classes of plant and equipment that are homogenous, eg, motor vehicles and certain types of office equipment or industrial machinery, the market approach is commonly used as there *may* be sufficient data of recent sales of similar *assets*. However, many types of plant and equipment are specialised and where direct sales evidence for such items will not be available, care *must* be exercised in offering an opinion of value when available market data is poor or non-existent. In such circumstances it *may* be appropriate to adopt either the income approach or the cost approach to the *valuation*.

60. Income Approach

- 60.1. The income approach to the *valuation* of plant and equipment can be used where specific cash flows can be identified for the *asset* or a group of complementary *assets*, eg, where a group of *assets* forming a process plant is operating to produce a marketable product. However, some of the cash flows *may* be attributable to intangible *assets* and difficult to separate from the cash flow contribution of the plant and equipment. Use of the income approach is not normally practical for many individual items of plant or equipment; however, it can be utilised in assessing the existence and quantum of economic obsolescence for an *asset* or *asset* group.
- 60.2. When an income approach is used to value plant and equipment, the *valuation* *must* consider the cash flows expected to be generated over the life of the *asset(s)* as well as the *value* of the *asset* at the end of its life. Care *must* be exercised when plant and equipment is valued on an income approach to ensure that elements of *value* relating to intangible *assets*, goodwill and other contributory *assets* is excluded (see IVS 210 *Intangible Assets*).

70. Cost Approach

- 70.1. The cost approach is commonly adopted for plant and equipment, particularly in the case of individual *assets* that are specialised or special-use facilities. The first step is to estimate the *cost* to a market *participant* of replacing the subject *asset* by reference to the lower of either reproduction or replacement cost. The replacement cost is the *cost* of obtaining an alternative *asset* of equivalent utility; this can either be a modern equivalent providing the same functionality or the *cost* of reproducing an exact replica of the subject *asset*. After concluding on a replacement cost, the *value* *should* be adjusted to reflect the impact on *value* of physical, functional, technological and economic obsolescence on *value*. In any event, adjustments made to any particular replacement cost *should* be designed to produce the same *cost* as the modern equivalent *asset* from an output and utility point of view.

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- 70.2. An entity's actual *costs* incurred in the acquisition or construction of an *asset* *may* be appropriate for use as the replacement cost of an *asset* under certain circumstances. However, prior to using such historical cost information, the *valuer* *should* consider the following:
- (a) Timing of the historical expenditures: An entity's actual *costs* *may* not be relevant, or *may* need to be adjusted for inflation/indexation to an equivalent as of the valuation date, if they were not incurred recently due to changes in market prices, inflation/deflation or other factors.
 - (b) The *basis of value*: Care *must* be taken when adopting a particular market *participant*'s own costings or profit margins, as they *may* not represent what typical market *participants* might have paid. The *valuer* *must* also consider the possibility that the entity's *costs* incurred *may* not be historical in nature due to prior purchase accounting or the purchase of used plant and equipment *assets*. In any case, historical costs *must* be trended using appropriate indices.
 - (c) Specific costs included: A *valuer* *must* consider all significant costs that have been included and whether those costs contribute to the *value* of the *asset* and for some *bases of value*, some amount of profit margin on *costs* incurred *may* be appropriate.
 - (d) Non-market components: Any *costs*, discounts or rebates that would not be incurred by, or available to, typical market *participants* *should* be excluded.
- 70.3. Having established the replacement cost, deductions *must* be made to reflect the physical, functional, technological and economic obsolescence as applicable (see IVS 105 *Valuation Approaches and Methods*, section 80).
- Cost-to-Capacity Method**
- 70.4. Under the cost-to-capacity method, the replacement cost of an *asset* with an actual or required capacity can be determined by reference to the cost of a similar *asset* with a different capacity.
- 70.5. The cost-to-capacity method is generally used in one of two ways:
- (a) to estimate the replacement cost for an *asset* or *assets* with one capacity where the replacement costs of an *asset* or *assets* with a different capacity are known (such as when the capacity of two subject *assets* could be replaced by a single *asset* with a known *cost*), or
 - (b) to estimate the replacement cost for a modern equivalent *asset* with capacity that matches foreseeable demand where the subject *asset* has excess capacity (as a means of measuring the penalty for the lack of utility to be applied as part of an economic obsolescence adjustment).
- 70.6. This method *may* only be used as a check method unless there is an existence of an exact comparison plant of the same designed capacity that resides within the same geographical area.
- 70.7. It is noted that the relationship between *cost* and capacity is often not linear, so some form of exponential adjustment *may* also be required.

*International Valuation Standards***80. Special Considerations for Plant and Equipment**

- 80.1. The following section Financing Arrangements addresses a non-exhaustive list of topics relevant to the *valuation* of plant and equipment.

90. Financing Arrangements

- 90.1. Generally, the *value* of an *asset* is independent of how it is financed. However, in some circumstances the way items of plant and equipment are financed and the stability of that financing *may* need to be considered in *valuation*.
- 90.2. An item of plant and equipment *may* be subject to a leasing or financing arrangement. Accordingly, the *asset* cannot be sold without the lender or lessor being paid any balance outstanding under the financing arrangement. This payment *may* or *may* not exceed the unencumbered value of the item to the extent unusual/excessive for the industry. Depending upon the *purpose* of the *valuation*, it *may* be appropriate to identify any encumbered *assets* and to report their *values* separately from the unencumbered *assets*.
- 90.3. Items of plant and equipment that are subject to operating leases are the property of third parties and are therefore not included in a *valuation* of the *assets* of the lessee, subject to the lease meeting certain conditions. However, such *assets* *may* need to be recorded as their presence *may* impact on the *value* of owned *assets* used in association. In any event, prior to undertaking a *valuation*, the *valuer* *should* establish (in conjunction with *Client* and/or advisors) whether *assets* are subject to operating lease, finance lease or loan, or other secured lending. The conclusion on this regard and wider *purpose* of the *valuation* will then dictate the appropriate basis and valuation methodology.

IVS 400 Real Property Interests

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of real property interests. This standard contains additional requirements for *valuations* of real property interests.

20. Introduction

- 20.1. Property interests are normally defined by state or the law of individual *jurisdictions* and are often regulated by national or local legislation. In some instances, legitimate individual, communal/community and/or collective rights over land and buildings are held in an informal, traditional, undocumented and unregistered manner. Before undertaking a *valuation* of a real property interest, a *valuer must* understand the relevant legal framework that affects the interest being valued.
- 20.2. A real property interest is a right of ownership, control, use or occupation of land and buildings. A real property interest includes informal tenure rights for communal/community and or collective or tribal land and urban/rural informal settlements or transition economies, which can take the form of possession, occupation and rights to use.

There are three main types of interest:

- (a) the superior interest in any defined area of land. The owner of this interest has an absolute right of possession and control of the land and any buildings upon it in perpetuity, subject only to any subordinate interests and any statutory or other legally enforceable constraints,
- (b) a subordinate interest that normally gives the holder rights of exclusive possession and control of a defined area of land or buildings for a defined period, eg, under the terms of a lease contract, and/or
- (c) a right to use land or buildings but without a right of exclusive possession or control, eg, a right to pass over land or to use it only for a specified activity.

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- 20.3. Intangible assets fall outside the classification of real property assets. However, an intangible asset *may* be associated with, and have a material impact on, the *value* of real property assets. It is therefore essential to be clear in the scope of work precisely what the valuation assignment is to include or exclude. For example, the *valuation* of a hotel can be inextricably linked to the hotel brand. In such cases, the valuation process will involve consideration of the inclusion of intangible assets and their impact on the *valuation* of the real property and plant and equipment assets. When there is an intangible asset component, the *valuer* should also follow IVS 210 *Intangible Assets*.
- 20.4. Although different words and terms are used to describe these types of real property interest in different *jurisdictions*, the concepts of an unlimited absolute right of ownership, an exclusive interest for a limited period or a non-exclusive right for a specified *purpose* are common to most. The immovability of land and buildings means that it is the right that a party holds that is transferred in an exchange, not the physical land and buildings. The *value*, therefore, attaches to the legal interest rather than to the physical land and buildings.
- 20.5. To comply with the requirement to identify the *asset* to be valued in IVS 101 *Scope of Work*, para 20.3.(d) the following matters *must* be included:
- (a) a description of the real property interest to be valued, and
 - (b) identification of any superior or subordinate interests that affect the interest to be valued.
- 20.6. To comply with the requirements to state the extent of the investigation and the nature and source of the information to be relied upon in IVS 101 *Scope of Work*, para 20.3.(j) and IVS 102 *Investigations and Compliance*, the following matters *should* be considered:
- (a) the evidence, if available, required to verify the real property interest and any relevant related interests,
 - (b) the extent of any inspection,
 - (c) responsibility for information on the site area, site characteristics and building floor areas,
 - (d) responsibility for confirming the specification and condition of any building,
 - (e) the extent of investigation into the nature, specification and adequacy of services,
 - (f) the existence of any information on ground conditions and soil conditions,
 - (g) responsibility for the identification of actual or potential environmental factors,
 - (h) legal permissions or restrictions on the use of the property and any buildings, as well as any expected or potential changes to legal permissions and restrictions.

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- 20.7. Typical examples of special assumptions that *may* need to be agreed and confirmed in order to comply with IVS 101 *Scope of Work*, para 20.3. (K) include:
- (a) that a defined physical change had occurred, eg, a proposed building is valued as if complete at the valuation date,
 - (b) that there had been a change in the status of the property, eg, a vacant building had been leased or a leased building had become vacant at the valuation date,
 - (c) that the interest is being valued without taking into account other existing interests, and
 - (d) that the property is free from contamination or other environmental risks.

- 20.8. *Valuations* of real property interests are often required for different *purposes* including secured lending, sales and purchases, taxation, litigation, compensation, insolvency proceedings and financial reporting.

30. Bases of Value

- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate *basis(es)* of value when valuing real property interests.
- 30.2. Under most *bases of value*, a *valuer must* consider the highest and best use of the real property, which *may* differ from its current use (see IVS 104 *Bases of Value*, para 30.3). This assessment is particularly important to real property interests which can be changed from one use to another or that have development potential.

40. Valuation Approaches and Methods

- 40.1. The three valuation approaches described in the IVS 105 *Valuation Approaches and Methods* can all be applicable for the *valuation* of a real property interest.
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches and Methods*, including para 10.3 and 10.4.

50. Market Approach

- 50.1. Property interests are generally heterogeneous (ie, with different characteristics). Even if the land and buildings have identical physical characteristics to others being exchanged in the market, the location will be different. Notwithstanding these dissimilarities, the market approach is commonly applied for the *valuation* of real property interests.
- 50.2. In order to compare the subject of the *valuation* with the *price* of other real property interests, *valuers should* adopt generally accepted and appropriate units of comparison that are considered by *participants*, dependent upon the type of *asset* being valued. Units of comparison that are commonly used include:
- (a) price per square metre (or per square foot) of a building or per hectare for land,
 - (b) price per room, and

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(c) price per unit of output, eg, crop yields.

- 50.3. A unit of comparison is only useful when it is consistently selected and applied to the subject property and the comparable properties in each analysis. To the extent possible, any unit of comparison used *should* be one commonly used by *participants* in the relevant market.
- 50.4. The reliance that can be applied to any comparable price data in the valuation process is determined by comparing various characteristics of the property and transaction from which the data was derived with the property being valued. Differences between the following *should* be considered in accordance with IVS 105 *Valuation Approaches and Methods*, para 30.8. Specific differences that *should* be considered in *valuing* real property interests include, but are not limited to:
 - (a) the type of interest providing the price evidence and the type of interest being valued,
 - (b) the respective locations,
 - (c) the respective quality of the land or the age and specification of the buildings,
 - (d) the permitted use or zoning at each property,
 - (e) the circumstances under which the *price* was determined and the *basis of value* required,
 - (f) the effective date of the price evidence and the valuation date, and
 - (g) market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

60. Income Approach

- 60.1. Various methods are used to indicate *value* under the general heading of the income approach, all of which share the common characteristic that the *value* is based upon an actual or estimated income that either is, or could be, generated by an owner of the interest. In the case of an investment property, that income could be in the form of rent (see paras 90.1-90.3); in an owner-occupied building, it could be an assumed rent (or rent saved) based on what it would cost the owner to lease equivalent space.
- 60.2. For some real property interests, the income-generating ability of the property is closely tied to a particular use or business/trading activity (for example, hotels, golf courses, etc). Where a building is suitable for only a particular type of trading activity, the income is often related to the actual or potential cash flows that would accrue to the owner of that building from the trading activity. The use of a property's trading potential to indicate its *value* is often referred to as the "profits method".
- 60.3. When the income used in the income approach represents cash flow from a business/trading activity (rather than cash flow related to rent, maintenance and other real property-specific costs), the *valuer* *should* also comply as appropriate with the requirements of IVS 200 *Business and Business Interests* and, where applicable, IVS 210 *Intangible Assets*.

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- 60.4. For real property interests, various forms of discounted cash flow models *may* be used. These vary in detail but share the basic characteristic that the cash flow for a defined future period is adjusted to a present value using a *discount rate*. The sum of the present day values for the individual periods represents an estimate of the capital value. The *discount rate* in a discounted cash flow model will be based on the time cost of money and the risks and rewards of the income stream in question.
- 60.5. Further information on the derivation of *discount rates* is included in IVS 105 *Valuation Approaches and Methods*, paras 50.29-50.31. The development of a yield or *discount rate* *should* be influenced by the objective of the *valuation*. For example:
- (a) if the objective of the *valuation* is to establish the *value* to a particular owner or potential owner based on their own investment criteria, the rate used *may* reflect their required rate of return or their weighted average cost of capital, and
 - (b) if the objective of the *valuation* is to establish the *market value*, the *discount rate* *may* be derived from observation of the returns implicit in the price paid for real property interests traded in the market between *participants* or from hypothetical *participants'* required rates or return. When a *discount rate* is based on an analysis of market transactions, *valuers* *should* also follow the guidance contained in IVS 105 *Valuation Approaches and Methods*, paras 30.7 and 30.8.
- 60.6. An appropriate *discount rate* *may* also be built up from a typical “risk-free” return adjusted for the additional risks and opportunities specific to the particular real property interest.
- 70. Cost Approach**
- 70.1. In applying the cost approach, *valuers* *must* follow the guidance contained in IVS 105 *Valuation Approaches and Methods*, paras 70.1-70.14.
- 70.2. This approach is generally applied to the *valuation* of real property interests through the depreciated replacement cost method.
- 70.3. It *may* be used as the primary approach when there is either no evidence of transaction prices for similar property or no identifiable actual or notional income stream that would accrue to the owner of the relevant interest.
- 70.4. In some cases, even when evidence of market transaction prices or an identifiable income stream is available, the cost approach *may* be used as a secondary or corroborating approach.
- 70.5. The first step requires a replacement cost to be calculated. This is normally the *cost* of replacing the property with a modern equivalent at the relevant valuation date. An exception is where an equivalent property would need to be a replica of the subject property in order to provide a *participant* with the same utility, in which case the replacement cost would be that of reproducing or replicating the subject building rather than replacing it with a modern equivalent. The replacement cost *must* reflect all incidental costs, as appropriate, such as the *value* of the land, infrastructure, design fees, finance costs and developer profit that would be incurred by a *participant* in creating an equivalent asset.

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- 70.6. The cost of the modern equivalent *must* then, as appropriate, be subject to adjustment for physical, functional, technological and economic obsolescence (see IVS 105 *Valuation Approaches and Methods*, section 80). The objective of an adjustment for obsolescence is to estimate how much less valuable the subject property might, or would be, to a potential buyer than the modern equivalent. Obsolescence considers the physical condition, functionality and economic utility of the subject property compared to the modern equivalent.

80. Special Considerations for Real Property Interests

- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of real property interests.
- (a) Hierarchy of Interests (section 90).
 - (b) Rent (section 100).

90. Hierarchy of Interests

- 90.1. The different types of real property interests are not mutually exclusive. For example, a superior interest *may* be subject to one or more subordinate interests. The owner of the absolute interest *may* grant a lease interest in respect of part or all of his interest. Lease interests granted directly by the owner of the absolute interest are "head lease" interests. Unless prohibited by the terms of the lease contract, the holder of a head lease interest can grant a lease of part or all of that interest to a third party, which is known as a sub-lease interest. A sub-lease interest will always be shorter than, or coterminous with, the head lease out of which it is created.
- 90.2. These property interests will have their own characteristics, as illustrated in the following examples:
- (a) Although an absolute interest provides outright ownership in perpetuity, it *may* be subject to the effect of subordinate interests. These subordinate interests could include leases, restrictions imposed by a previous owner or restrictions imposed by statute.
 - (b) A lease interest will be for a defined period, at the end of which the property reverts to the holder of the superior interest out of which it was created. The lease contract will normally impose obligations on the lessee, eg, the payment of rent and other expenses. It *may* also impose conditions or restrictions, such as in the way the property *may* be used or on any transfer of the interest to a third party.
 - (c) A right of use *may* be held in perpetuity or *may* be for a defined period. The right *may* be dependent on the holder making payments or complying with certain other conditions.
- 90.3. When valuing a real property interest it is therefore necessary to identify the nature of the rights accruing to the holder of that interest and reflect any constraints or encumbrances imposed by the existence of other interests in the same property. The sum of the individual *values* of various different interests in the same property will frequently differ from the *value* of the unencumbered superior interest.

*Asset Standards***100. Rent**

- 100.1. Market rent is addressed as a *basis of value* in IVS 104 *Bases of Value*.
- 100.2. When valuing either a superior interest that is subject to a lease or an interest created by a lease, *valuers must* consider the contract rent and, in cases where it is different, the market rent.
- 100.3. The contract rent is the rent payable under the terms of an actual lease. It *may* be fixed for the duration of the lease or variable. The frequency and basis of calculating variations in the rent will be set out in the lease and *must* be identified and understood in order to establish the total benefits accruing to the lessor and the liability of the lessee.

IVS 410 Development Property

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10. Overview

- 10.1. The principles contained in the General Standards IVS 101 to IVS 105 apply to *valuations* of development property. This standard only includes modifications, additional requirements or specific examples of how the General Standards apply for *valuations* to which this standard applies. *Valuations* of development property *must* also follow IVS 400 *Real Property Interests*.

20. Introduction

- 20.1. In the context of this standard, development properties are defined as interests where redevelopment is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date and include:
- (a) the construction of buildings,
 - (b) previously undeveloped land which is being provided with infrastructure,
 - (c) the redevelopment of previously developed land,
 - (d) the improvement or alteration of existing buildings or structures,
 - (e) land allocated for development in a statutory plan, and
 - (f) land allocated for a higher *value* uses or higher density in a statutory plan.
- 20.2. *Valuations* of development property *may* be required for different *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation*. A non-exhaustive list of examples of circumstances that *may* require a development valuation is provided below:
- (a) when establishing whether proposed projects are financially feasible,

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- (b) as part of general consulting and transactional support engagements for acquisition and loan security,
 - (c) for tax reporting *purposes*, development valuations are frequently needed for ad valorem taxation analyses,
 - (d) for litigation requiring valuation analysis in circumstances such as shareholder disputes and damage calculations,
 - (e) for financial reporting *purposes*, *valuation* of a development property is often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis, and
 - (f) for other statutory or legal events that *may* require the *valuation* of development property such as compulsory purchases.
- 20.3. When *valuing* development property, *valuers must* follow the applicable standard for that type of *asset* or liability (for example, IVS 400 *Real Property Interests*).
- 20.4. The residual value or land value of a development property can be very sensitive to changes in assumptions or projections concerning the income or revenue to be derived from the completed project or any of the development costs that will be incurred. This remains the case regardless of the method or methods used or however diligently the various inputs are researched in relation to the valuation date.
- 20.5. This sensitivity also applies to the impact of *significant* changes in either the *costs* of the project or the *value* on completion. If the *valuation* is required for a *purpose* where *significant* changes in *value* over the duration of a construction project *may* be of concern to the user (eg, where the *valuation* is for loan security or to establish a project's viability), the *valuer must* highlight the potentially disproportionate effect of possible changes in either the construction costs or end value on the profitability of the project and the *value* of the partially completed property. A sensitivity analysis *may* be useful for this *purpose* provided it is accompanied by a suitable explanation.
- 30. Bases of Value**
- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate *basis(es)* of *value* when *valuing* development property.
- 30.2. The *valuation* of development property often includes a *significant* number of assumptions and special assumptions regarding the condition or status of the project when complete. For example, special assumptions *may* be made that the development has been completed or that the property is fully leased. As required by IVS 101 *Scope of Work*, *significant* assumptions and special assumptions used in a *valuation* *must* be communicated to all parties to the valuation engagement and *must* be agreed and confirmed in the scope of work. Particular care *may* also be required where reliance *may* be placed by third parties on the valuation outcome.
- 30.3. Frequently it will be either impracticable or impossible to verify every feature of a development property which could have an impact on potential future development, such as where ground conditions have yet to be investigated. When this is the case, it *may* be appropriate to make assumptions (eg, that

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there are no abnormal ground conditions that would result in significantly increased costs). If this was an assumption that a *participant* would not make, it would need to be presented as a special assumption.

- 30.4. In situations where there has been a change in the market since a project was originally conceived, a project under construction *may* no longer represent the highest and best use of the land. In such cases, the *costs* to complete the project originally proposed *may* be irrelevant as a buyer in the market would either demolish any partially completed structures or adapt them for an alternative project. The *value* of the development property under construction would need to reflect the current value of the alternative project and the *costs* and risks associated with completing that project.
- 30.5. For some development properties, the property is closely tied to a particular use or business/trading activity or a special assumption is made that the completed property will trade at specified and sustainable levels. In such cases, the *valuer must*, as appropriate, also comply with the requirements of IVS 200 *Business and Business Interests* and, where applicable, IVS 210 *Intangible Assets*.

40. Valuation Approaches and Methods

- 40.1. The three principal valuation approaches described in IVS 105 *Valuation Approaches and Methods* *may* all be applicable for the *valuation* of a real property interest. There are two main approaches in relation to the *valuation* of the development property. These are:
 - (a) the market approach (see section 50), and
 - (b) the residual method, which is a hybrid of the market approach, the income approach and the cost approach (see sections 40-70). This is based on the completed “gross development value” and the deduction of development costs and the developer’s return to arrive at the residual value of the development property (see section 90).
- 40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches and Methods*, including para 10.3.
- 40.3. The valuation approach to be used will depend on the required *basis of value* as well as specific facts and circumstances, eg, the level of recent transactions, the stage of development of the project and movements in property markets since the project started, and *should always* be that which is most appropriate to those circumstances. Therefore, the exercise of judgement in the selection of the most suitable approach is critical.

50. Market Approach

- 50.1. Some types of development property can be sufficiently homogenous and frequently exchanged in a market for there to be sufficient data from recent sales to use as a direct comparison where a *valuation* is required.
- 50.2. In most markets, the market approach *may* have limitations for larger or more complex development property, or smaller properties where the proposed improvements are heterogeneous. This is because the number and extent of the variables between different properties make direct

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comparisons of all variables inapplicable though correctly adjusted market evidence (See IVS 105 *Valuation Approaches and Methods*, section 20.5) *may* be used as the basis for a number of variables within the *valuation*.

- 50.3. For development property where work on the improvements has commenced but is incomplete, the application of the market approach is even more problematic. Such properties are rarely transferred between *participants* in their partially-completed state, except as either part of a transfer of the owning entity or where the seller is either insolvent or facing insolvency and therefore unable to complete the project. Even in the unlikely event of there being evidence of a transfer of another partially-completed development property close to the *valuation* date, the degree to which work has been completed would almost certainly differ, even if the properties were otherwise similar.
- 50.4. The market approach *may* also be appropriate for establishing the *value* of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method (section 90).

60. Income Approach

- 60.1. Establishing the residual value of a development property *may* involve the use of a cash flow model in some markets.
- 60.2. The income approach *may* also be appropriate for establishing the *value* of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method (see section 90).

70. Cost Approach

- 70.1. Establishing the development costs is a key component of the residual approach (see para 90.5).
- 70.2. The cost approach *may* also exclusively be used as a means of indicating the *value* of development property such as a proposed development of a building or other structure for which there is no active market on completion.
- 70.3. The cost approach is based on the economic principle that a buyer will pay no more for an *asset* than the amount to create an *asset* of equal utility. To apply this principle to development property, the *valuer must* consider the *cost* that a prospective buyer would incur in acquiring a similar *asset* with the potential to earn a similar profit from development as could be obtained from development of the subject property. However, unless there are unusual circumstances affecting the subject development property, the process of analysing a proposed development and determining the anticipated costs for a hypothetical alternative would effectively replicate either the market approach or the residual method as described above, which can be applied directly to the subject property.
- 70.4. Another difficulty in applying the cost approach to development property is in determining the profit level, which is its “utility” to a prospective buyer. Although a developer *may* have a target profit at the commencement of a project, the actual profit is normally determined by the *value* of the property at completion. Moreover, as the property approaches completion, some of

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the risks associated with development are likely to reduce, which *may* impact on the required return of a buyer. Unless a fixed price has been agreed, profit is not determined by the *costs* incurred in acquiring the land and undertaking the improvements.

80. Special Considerations for a Development Property

- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of development property:
 - (a) Residual Method (section 90).
 - (b) Existing Asset (section 100).
 - (c) Special Considerations for Financial Reporting (section 110).
 - (d) Special Considerations for Secured Lending (section 120).

90. Residual Method

- 90.1. The residual method is so called because it indicates the residual amount after deducting all known or anticipated *costs* required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with completion of the project. This is known as the residual value.
- 90.2. The residual value can be highly sensitive to relatively small changes in the forecast cash flows and the practitioner *should* provide separate sensitivity analyses for each *significant* factor.
- 90.3. Caution is required in the use of this method because of the sensitivity of the result to changes in many of the inputs, which *may* not be precisely known on the valuation date, and therefore have to be estimated with the use of assumptions.
- 90.4. The models used to apply the residual method vary considerably in complexity and sophistication, with the more complex models allowing for greater granularity of inputs, multiple development phases and sophisticated analytical tools. The most suitable model will depend on the size, duration and complexity of the proposed development.
- 90.5. In applying the residual method, a *valuer* *should* consider and evaluate the reasonableness and reliability of the following:
 - (a) the source of information on any proposed building or structure, eg, any plans and specification that are to be relied on in the *valuation*, and
 - (b) any source of information on the construction and other *costs* that will be incurred in completing the project and which will be used in the *valuation*.
- 90.6. The following basic elements require consideration in any application of the method to estimate the *market value* of development property and if another basis is required, alternative inputs *may* be required.
 - (a) Completed property value,
 - (b) Construction costs,
 - (c) Consultants fees,

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- (d) Marketing costs,
- (e) Timetable,
- (f) Finance costs,
- (g) Development profit,
- (h) *Discount rate.*

Value of Completed Property

- 90.7. The first step requires an estimate of the *value* of the relevant interest in the real property following notional completion of the development project, which *should* be developed in accordance with IVS 105 *Valuation Methods and Approaches*.
- 90.8. Regardless of the methods adopted under either the market or income approach, the *valuer* *must* adopt one of the two basic underlying assumptions:
 - (a) the estimated *market value* on completion is based on *values* that are current on the valuation date on the special assumption the project had already been completed in accordance with the defined plans and specification, or
 - (b) the estimated value on completion is based on the special assumption that the project is completed in accordance with the defined plans and specification on the anticipated date of completion.
- 90.9. Market practice and availability of relevant data *should* determine which of these assumptions is more appropriate. However, it is important that there is clarity as to whether current or projected values are being used.
- 90.10. If estimated gross development value is used, it *should* be made clear that these are based on special assumptions that a *participant* would make based on information available on the valuation date.
- 90.11. It is also important that care is taken to ensure that consistent assumptions are used throughout the residual value calculation, ie, if current values are used then the *costs* *should* also be current and *discount rates* derived from analysis of current prices.
- 90.12. If there is a pre-sale or pre-lease agreement in place that is conditional on the project, or a relevant part, being completed, this will be reflected in the *valuation* of the completed property. Care *should* be taken to establish whether the *price* in a pre-sale agreement or the rent and other terms in a pre-lease agreement reflect those that would be agreed between *participants* on the valuation date.
- 90.13. If the terms are not reflective of the market, adjustments *may* need to be made to the *valuation*.
- 90.14. It would also be appropriate to establish if these agreements would be assignable to a purchaser of the relevant interest in the development property prior to the completion of the project.

*International Valuation Standards****Construction Costs***

- 90.15. The costs of all work required at the valuation date to complete the project to the defined specification need to be identified. Where no work has started, this will include any preparatory work required prior to the main building contract, such as the *costs* of obtaining statutory permissions, demolition or off-site enabling work.
- 90.16. Where work has commenced, or is about to commence, there will normally be a contract or contracts in place that can provide the independent confirmation of *cost*. However, if there are no contracts in place, or if the actual contract costs are not typical of those that would be agreed in the market on the valuation date, then it *may* be necessary to estimate these *costs* reflecting the reasonable expectation of *participants* on the valuation date of the probable *costs*.
- 90.17. The benefit of any work carried out prior to the valuation date will be reflected in the *value*, but will not determine that *value*. Similarly, previous payments under the actual building contract for work completed prior to the valuation date are not relevant to current *value*.
- 90.18. In contrast, if payments under a building contract are geared to the work completed, the sums remaining to be paid for work not yet undertaken at the valuation date *may* be the best evidence of the construction *costs* required to complete the work.
- 90.19. However, contractual costs *may* include special requirements of a specific end user and therefore *may* not reflect the general requirements of *participants*.
- 90.20. Moreover, if there is a material risk that the contract *may* not be fulfilled, (eg, due to a dispute or insolvency of one of the parties), it *may* be more appropriate to reflect the cost of engaging a new contractor to complete the outstanding work.
- 90.21. When valuing a partly completed development property, it is not appropriate to rely solely on projected costs and income contained in any project plan or feasibility study produced at the commencement of the project.
- 90.22. Once the project has commenced, this is not a reliable tool for measuring *value* as the inputs will be historic. Likewise, an approach based on estimating the percentage of the project that has been completed prior to the valuation date is unlikely to be relevant in determining the current *market value*.

Consultants' Fees

- 90.23. These include legal and professional costs that would be reasonably incurred by a *participant* at various stages through the completion of the project.

Marketing Costs

- 90.24. If there is no identified buyer or lessee for the completed project, it will normally be appropriate to allow for the *costs* associated with appropriate marketing, and for any leasing commissions and consultants' fees incurred for marketing not included under para 90.23.

Asset Standards***Timetable***

- 90.25. The duration of the project from the valuation date to the expected date of physical completion of the project needs to be considered, together with the phasing of all cash outflows for construction costs, consultants' fees, etc
- 90.26. If there is no sale agreement in place for the relevant interest in the development property following practical completion, an estimate *should* be made of the marketing period that might typically be required following completion of construction until a sale is achieved.
- 90.27. If the property is to be held for investment after completion and if there are no pre-leasing agreements, the time required to reach stabilised occupancy needs to be considered (ie, the period required to reach a realistic long-term occupancy level). For a project where there will be individual letting units, the stabilised occupancy levels *may* be less than 100 percent if market experience indicates that a number of units *may* be expected to always be vacant, and allowance *should* be considered for costs incurred by the owner during this period such as additional marketing costs, incentives, maintenance and/or unrecoverable service charges.

Finance Costs

- 90.28. These represent the *cost* of finance for the project from the valuation date through to the completion of the project, including any period required after physical completion to either sell the interest or achieve stabilised occupancy. As a lender *may* perceive the risks during construction to differ substantially from the risks following completion of construction, the finance cost during each period *may* also need to be considered separately. Even if an entity is intending to self-fund the project, an allowance *should* be made for interest at a rate which would be obtainable by a *participant* for borrowing to fund the completion of the project on the valuation date.

Development Profit

- 90.29. Allowance *should* be made for development profit, or the return that would be required by a buyer of the development property in the market place for taking on the risks associated with completion of the project on the valuation date. This will include the risks involved in achieving the anticipated income or capital value following physical completion of the project.
- 90.30. This target profit can be expressed as a lump sum, a percentage return on the *costs* incurred or a percentage of the anticipated value of the project on completion or a rate of return. Market practice for the type of property in question will normally indicate the most appropriate option. The amount of profit that would be required will reflect the level of risk that would be perceived by a prospective buyer on the valuation date and will vary according to factors such as:
- (a) the stage which the project has reached on the valuation date. A project which is nearing completion will normally be viewed as being less risky than one at an early stage, with the exception of situations where a party to the development is insolvent,
 - (b) whether a buyer or lessee has been secured for the completed project, and

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- (c) the size and anticipated remaining duration of the project. The longer the project, the greater the risk caused by exposure to fluctuations in future *costs* and receipts and changing economic conditions generally.
- 90.31. The following are examples of factors that *may* typically need to be considered in an assessment of the relative risks associated with the completion of a development project:
- (a) unforeseen complications that increase construction costs,
 - (b) potential for contract delays caused by adverse weather or other matters outside of developer's control,
 - (c) delays in obtaining statutory consents,
 - (d) supplier failures,
 - (e) entitlement risk and changes in entitlements over the development period,
 - (f) regulatory changes, and
 - (g) delays in finding a buyer or lessee for the completed project.
- 90.32. Whilst all of the above factors will impact the perceived risk of a project and the profit that a buyer or the development property would require, care *must* be taken to avoid double counting, either where contingencies are already reflected in the residual valuation model or risks in the *discount rate* used to bring future cash flows to present value.
- 90.33. The risk of the estimated value of the completed development project changing due to changed market conditions over the duration of the project will normally be reflected in the *discount rate* or capitalisation rate used to value the completed project.
- 90.34. The profit anticipated by the owner of an interest in development property at the commencement of a development project will vary according to the *valuation* of its interest in the project once construction has commenced. The *valuation* *should* reflect those risks remaining at the valuation date and the discount or return that a buyer of the partially completed project would require for bringing it to a successful conclusion.
- Discount Rate***
- 90.35. In order to arrive at an indication of the *value* of the development property on the valuation date, the residual method requires the application of a *discount rate* to all future cash flows in order to arrive at a net present value. This *discount rate* *may* be derived using a variety of methods (see IVS 105 *Valuation Approaches and Methods*, paras 50.30-50.39).
- 90.36. If the cash flows are based on *values* and *costs* that are current on the valuation date, the risk of these changing between the valuation date and the anticipated completion date *should* be considered and reflected in the *discount rate* used to determine the present value. If the cash flows are based on prospective values and *costs*, the risk of those projections proving to be inaccurate *should* be considered and reflected in the *discount rate*.

Asset Standards**100. Existing Asset**

- 100.1. In the *valuation* of development property, it is necessary to establish the suitability of the real property in question for the proposed development. Some matters *may* be within the *valuer's* knowledge and experience but some *may* require information or reports from other specialists. Matters that typically need to be considered for specific investigation when undertaking a *valuation* of a development property before a project commences include:
- (a) whether or not there is a market for the proposed development,
 - (b) is the proposed development the highest and best use of the property in the current market,
 - (c) whether there are other non-financial obligations that need to be considered (political or social criteria),
 - (d) legal permissions or zoning, including any conditions or constraints on permitted development,
 - (e) limitations, encumbrances or conditions imposed on the relevant interest by private contract,
 - (f) rights of access to public highways or other public areas,
 - (g) geotechnical conditions, including potential for contamination or other environmental risks,
 - (h) the availability of, and requirements to, provide or improve necessary services, eg, water, drainage and power,
 - (i) the need for any off-site infrastructure improvements and the rights required to undertake this work,
 - (j) any archaeological constraints or the need for archaeological investigations,
 - (k) sustainability and any *client* requirements in relation to green buildings,
 - (l) economic conditions and trends and their potential impact on *costs* and receipts during the development period,
 - (m) current and projected supply and demand for the proposed future uses,
 - (n) the availability and *cost* of funding,
 - (o) the expected time required to deal with preparatory matters prior to starting work, for the completion of the work and, if appropriate, to rent or sell the completed property, and
 - (p) any other risks associated with the proposed development.
- 100.2. Where a project is in progress, additional enquires or investigations will typically be needed into the contracts in place for the design of the project, for its construction and for supervision of the construction.

*International Valuation Standards***110. Special Considerations for Financial Reporting**

- 110.1. The accounting treatment of development property can vary depending on how it is classified by the reporting entity (eg, whether it is being held for sale, for owner occupation or as investment property). This *may* affect the valuation requirements and therefore the classification and the relevant accounting requirements need to be determined before selecting an appropriate valuation method.
- 110.2. Financial statements are normally produced on the assumption that the entity is a going concern. It is therefore normally appropriate to assume that any contracts (eg, for the construction of a development property or for its sale or leasing on completion), would pass to the buyer in the hypothetical exchange, even if those contracts *may* not be assignable in an actual exchange. An exception would be if there was evidence of an abnormal risk of default by a contracted party on the valuation date.

120. Special Considerations for Secured Lending

- 120.1. The appropriate *basis of value* for secured lending is normally *market value*. However, in considering the *value* of a development property, regard *should* be given to the probability that any contracts in place, eg, for construction or for the sale or leasing of the completed project *may*, become void or voidable in the event of one of the parties being the subject of formal insolvency proceedings. Further regard *should* be given to any contractual obligations that *may* have a material impact on *market value*. Therefore, it *may* be appropriate to highlight the risk to a lender caused by a prospective buyer of the property not having the benefit of existing building contracts and/or pre-leases, and pre-sales and any associated warrantees and guarantees in the event of a default by the borrower.
- 120.2. To demonstrate an appreciation of the risks involved in valuing development property for secured lending or other *purposes*, the *valuer* *should* apply a minimum of two appropriate and recognised methods to valuing development property for each valuation project, as this is an area where there is often “insufficient factual or observable inputs for a single method to produce a reliable conclusion” (see IVS 105 *Valuation Approaches and Methods*, para 10.4).
- 120.3. The *valuer* *must* be able to justify the selection of the valuation approach(es) reported and *should* provide an “As Is” (existing stage of development) and an “As Proposed” (completed development) value for the development property and record the process undertaken and a rationale for the reported value (see IVS 103 *Reporting*, paras 30.1-30.2).

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IVS 500 Financial Instruments

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10. Overview

- 10.1. The principles contained in the General Standards apply to *valuations* of financial instruments. This standard only includes modifications, additional requirements or specific examples of how the General Standards apply for *valuations* to which this standard applies.

20. Introduction

- 20.1. A financial instrument is a contract that creates rights or obligations between specified parties to receive or pay cash or other financial consideration. Such instruments include but are not limited to, derivatives or other contingent instruments, hybrid instruments, fixed income, structured products and equity instruments. A financial instrument can also be created through the combination of other financial instruments in a portfolio to achieve a specific net financial outcome.
- 20.2. *Valuations* of financial instruments conducted under IVS 500 *Financial Instruments* can be performed for many different *purposes* including, but not limited to:
- (a) acquisitions, mergers and sales of businesses or parts of businesses,
 - (b) purchase and sale,
 - (c) financial reporting,
 - (d) legal or regulatory requirements (subject to any specific requirements set by the relevant authority),
 - (e) internal risk and compliance procedures,
 - (f) tax, and
 - (g) litigation.

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- 20.3. A thorough understanding of the instrument being valued is required to identify and evaluate the relevant market information available for identical or comparable instruments. Such information includes *prices* from recent transactions in the same or a similar instrument, quotes from brokers or pricing services, credit ratings, yields, volatility, indices or any other inputs relevant to the valuation process.
- 20.4. When *valuations* are being undertaken by the holding entity that are intended for use by external investors, regulatory authorities or other entities, to comply with the requirement to confirm the identity and status of the *valuer* in IVS 101 *Scope of Work*, para 20.3.(a), reference *must* be made to the control environment in place, as required by IVS 105 *Valuation Approaches and Methods* and IVS 500 *Financial Instruments* paras 120.1-120.3 regarding control environment.
- 20.5. To comply with the requirement to identify the *asset* or liability to be valued as in IVS 101 *Scope of Work*, para 20.3.(d), the following matters *must* be addressed:
- (a) the class or classes of instrument to be valued,
 - (b) whether the *valuation* is to be of individual instruments or a portfolio, and
 - (c) the unit of account.
- 20.6. IVS 102 *Investigations and Compliance*, paras 20.2-20.4 provide that the investigations required to support the *valuation* *must* be adequate having regard to the *purpose* of the assignment. To support these investigations, sufficient evidence supplied by the *valuer* and/or a credible and reliable third party *must* be assembled. To comply with these requirements, the following are to be considered:
- (a) All market data used or considered as an input into the valuation process *must* be understood and, as necessary, validated.
 - (b) Any model used to estimate the *value* of a financial instrument shall be selected to appropriately capture the contractual terms and economics of the financial instrument.
 - (c) Where observable prices of, or market inputs from, similar financial instruments are available, those imputed inputs from comparable price(s) and/or observable inputs *should* be adjusted to reflect the contractual and economic terms of the financial instrument being valued.
 - (d) Where possible, multiple valuation approaches are preferred. If differences in *value* occur between the valuation approaches, the *valuer* *must* explain and document the differences in *value*.
- 20.7. To comply with the requirement to disclose the valuation approach(es) and reasoning in IVS 103 *Reporting*, para 20.1, consideration *must* be given to the appropriate degree of reporting detail. The requirement to disclose this information in the valuation report will differ for different categories of financial instruments. Sufficient information *should* be provided to allow users to understand the nature of each class of instrument valued and the primary factors influencing the *values*. Information that adds little to a users' understanding as to the nature of the *asset* or liability, or that obscures the

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primary factors influencing *value*, *must* be avoided. In determining the level of disclosure that is appropriate, regard *must* be had to the following:

- (a) Materiality: The *value* of an instrument or class of instruments in relation to the total value of the holding entity's *assets* and liabilities or the portfolio that is valued.
- (b) Uncertainty: The *value* of the instrument *may* be subject to *significant* uncertainty on the valuation date due to the nature of the instrument, the model or inputs used or to market abnormalities. Disclosure of the cause and nature of any material uncertainty *should* be made.
- (c) Complexity: The greater the complexity of the instrument, the greater the appropriate level of detail to ensure that the assumptions and inputs affecting *value* are identified and explained.
- (d) Comparability: The instruments that are of particular interest to users *may* differ with the passage of time. The usefulness of the valuation report, or any other reference to the *valuation*, is enhanced if it reflects the information demands of users as market conditions change, although, to be meaningful, the information presented *should* allow comparison with previous periods.
- (e) Underlying instruments: If the cash flows of a financial instrument are generated from or secured by identifiable underlying *assets* or liabilities, the relevant factors that influence the underlying value *must* be provided in order to help users understand how the underlying value impacts the estimated value of the financial instrument.

30. Bases of Value

- 30.1. In accordance with IVS 104 *Bases of Value*, a *valuer* *must* select the appropriate *basis(es)* of *value* when valuing financial instruments.
- 30.2. Often, financial instrument valuations are performed using *bases of value* defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 104 *Bases of Value*) and it is the *valuer's* responsibility to understand and follow the regulation, case law, tax law and other interpretive guidance related to those *bases of value* as of the valuation date.

40. Valuation Approaches and Methods

- 40.1. When selecting an approach and method, in addition to the requirements of this chapter, a *valuer* *must* follow the requirements of IVS 105 *Valuation Approaches and Methods*.
- 40.2. The three valuation approaches described in IVS 105 *Valuation Approaches and Methods* *may* be applied to the *valuation* of financial instruments.
- 40.3. The various valuation methods used in financial markets are based on variations of the market approach, the income approach or the cost approach as described in the IVS 105 *Valuation Approaches and Methods*. This standard describes the commonly used methods and matters that need to be considered or the inputs needed when applying these methods.

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- 40.4. When using a particular valuation method or model, it is important to ensure that it is calibrated with observable market information, where available, on a regular basis to ensure that the model reflects current market conditions. As market conditions change, it *may* become necessary to change to a more suitable model(s) or to modify the existing model and recalibrate and/or make additional adjustments to the valuation inputs. Those adjustments *should* be made to ensure consistency with the required valuation basis, which in turn is determined by the *purpose* for which the *valuation* is required; see the IVS *Framework*.

50. Market Approach

- 50.1. A *price* obtained from trading on a liquid exchange on, or very close to, the time or date of valuation is normally the best indication of the *market value* of a holding of the identical instrument. In cases where there have not been recent relevant transactions, the evidence of quoted or consensus prices, or private transactions *may* also be relevant.
- 50.2. It *may* be necessary to make adjustments to the price information if the observed instrument is dissimilar to that being valued or if the information is not recent enough to be relevant. For example, if an observable price is available for similar instruments with one or more different characteristics to the instrument being valued, then the implied inputs from the comparable observable price are to be adjusted to reflect the specific terms of the financial instrument being valued.
- 50.3. When relying on a *price* from a pricing service, the *valuer* *must* understand how the *price* was derived.

60. Income Approach

- 60.1. The *value* of financial instruments *may* be determined using a discounted cash flow method. The terms of an instrument determine, or allow estimation of, the undiscounted cash flows. The terms of a financial instrument typically set out:
- (a) the timing of the cash flows, ie, when the entity expects to realise the cash flows related to the instrument,
 - (b) the calculation of the cash flows, eg, for a debt instrument, the interest rate that applies, or for a derivative instrument, how the cash flows are calculated in relation to the underlying instrument or index (or indices),
 - (c) the timing and conditions for any options in the contract, eg, put or call, prepayment, extension or conversion options, and
 - (d) protection of the rights of the parties to the instrument, eg, terms relating to credit risk in debt instruments or the priority over, or subordination to, other instruments held.
- 60.2. In establishing the appropriate *discount rate*, it is necessary to assess the return that would be required on the instrument to compensate for the time value of money and potential additional risks from, but not limited to the following:
- (a) the terms and conditions of the instrument, eg, subordination,

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- (b) the credit risk, ie, uncertainty about the ability of the counterparty to make payments when due,
 - (c) the liquidity and marketability of the instrument,
 - (d) the risk of changes to the regulatory or legal environment, and
 - (e) the tax status of the instrument.
- 60.3. Where future cash flows are not based on fixed contracted amounts, estimates of the expected cash flows will need to be made in order to determine the necessary inputs. The determination of the *discount rate* must reflect the risks of, and be consistent with, the cash flows. For example, if the expected cash flows are measured net of credit losses then the *discount rate* must be reduced by the credit risk component. Depending upon the *purpose* of the *valuation*, the inputs and assumptions made into the cash flow model will need to reflect either those that would be made by *participants*, or those that would be based on the holder's current expectations or targets. For example, if the *purpose* of the *valuation* is to determine *market value*, or *fair value* as defined in IFRS, the assumptions *should* reflect those of *participants*. If the *purpose* is to measure performance of an *asset* against management determined benchmarks, eg, a target internal rate of return, then alternative assumptions *may* be appropriate.
- 70. Cost Approach**
- 70.1. In applying the cost approach, *valuers must* follow the guidance contained in IVS 105 *Valuation Approaches and Methods*, paras 70.1-70.14.
- 80. Special Considerations for Financial Instruments**
- 80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of financial instruments:
- (a) Valuation Inputs (section 90).
 - (b) Credit Risk (section 100).
 - (c) Liquidity and Market Activity (section 110).
 - (d) Control Environment (section 120).
- 90. Valuation Inputs**
- 90.1. As per IVS 105 *Valuation Approaches and Methods*, para 10.7, any data set used as a valuation input, understanding the sources and how inputs are adjusted by the provider, if any, is essential to understanding the reliance that *should* be given to the use of the valuation input.
- 90.2. Valuation inputs *may* come from a variety of sources. Commonly used valuation input sources are broker quotations, consensus pricing services, the *prices* of comparable instruments from third parties and market data pricing services. Implied inputs can often be derived from such observable prices such as volatility and yields.
- 90.3. When assessing the validity of broker quotations, as evidence of how

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participants would price an *asset*, the *valuer* should consider the following:

- (a) Brokers generally make markets and provide bids in respect of more popular instruments and *may* not extend coverage to less liquid instruments. Because liquidity often reduces with time, quotations *may* be harder to find for older instruments.
 - (b) A broker is concerned with trading, not supporting *valuation*, and they have little incentive to research an indicative quotation as thoroughly as they would an executable quotation. A *valuer* is required to understand whether the broker quote is a binding, executable quote or a non-binding, theoretical quote. In the case of a non-binding quote, the *valuer* is required to gather additional information to understand if the quote *should* be adjusted or omitted from the *valuation*.
 - (c) There is an inherent conflict of interest where the broker is the counterparty to an instrument.
 - (d) Brokers have an incentive to encourage trading.
- 90.4. Consensus pricing services operate by collecting price or valuation input information about an instrument from several participating subscribers. They reflect a pool of quotations from different sources, sometimes with adjustment to compensate for any sampling bias. This overcomes the conflict of interest problems associated with single brokers. However, as with a broker quotation, it *may* not be possible to find a suitable input for all instruments in all markets. Additionally, despite its name, a consensus price *may* not necessarily constitute a true market “consensus”, but rather is more of a statistical estimate of recent market transactions or quoted prices. Therefore, the *valuer* needs to understand how the consensus pricing was estimated and if such estimates are reasonable, given the instrument being valued. Information and inputs relevant to the *valuation* of an illiquid instrument can often be gleaned through comparable transactions (see section 110 for further details).

100. Credit Risk Adjustments

- 100.1. Understanding the credit risk is often an important aspect of valuing a financial instrument and most importantly the issuer. Some of the common factors that need to be considered in establishing and measuring credit risk include the following:

- (a) Own credit and counterparty risk: Assessing the financial strength of the issuer or any credit support providers will involve consideration of not only historical and projected financial performance of the relevant entity or entities but also consideration of performance and prospects for the industry sector in which the business operates. In addition to issuer credit, the *valuer* *must* also consider the credit exposure of any counterparties to the *asset* or liability being valued. In the case of a clearing house settlement process, many *jurisdictions* now require certain derivatives to be transacted through a central counterparty which can mitigate risk, however residual counterparty risk needs to be considered.

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- (b) The *valuer* also needs to be able to differentiate between the credit risk of the instrument and the credit risk of the issuer and/or counterparty. Generally, the credit risk of the issuer or counterparty does not consider specific collateral related to the instrument.
 - (c) Subordination: Establishing the priority of an instrument is critical in assessing the default risk. Other instruments *may* have priority over an issuer's *assets* or the cash flows that support the instrument.
 - (d) Leverage: The amount of debt used to fund the *assets* from which an instrument's return is derived can affect the volatility of returns to the issuer and credit risk.
 - (e) Netting agreements: Where derivative instruments are held between counterparties, credit risk *may* be reduced by a netting or offset agreement that limits the obligations to the net value of the transactions, ie, if one party becomes insolvent, the other party has the right to offset sums owed to the insolvent party against sums due under other instruments.
 - (f) Default protection: Many instruments contain some form of protection to reduce the risk of non-payment to the holder. Protection might take the form of a guarantee by a third party, an insurance contract, a credit default swap or more *assets* to support the instrument than are needed to make the payments. Credit exposure is also reduced if subordinated instruments take the first losses on the underlying *assets* and therefore reduce the risk to more senior instruments. When protection is in the form of a guarantee, an insurance contract or a credit default swap, it is necessary to identify the party providing the protection and assess that party's creditworthiness. Considering the credit worthiness of a third party involves not only the current position but also the possible effect of any other guarantees or insurance contracts the entity has written. If the provider of a guarantee has also guaranteed other correlated debt securities, the risk of its non-performance will likely increase.
- 100.2. For parties for which limited information is available, if secondary trading in a financial instrument exists, there *may* be sufficient market data to provide evidence of the appropriate risk adjustment. If not, it might be necessary to look to credit indices, information available for entities with similar risk characteristics, or estimate a credit rating for the party using its own financial information. The varying sensitivities of different liabilities to credit risk, such as collateral and/or maturity differences, *should* be taken into account in evaluating which source of credit data provides the most relevant information. The risk adjustment or credit spread applied is based on the amount a *participant* would require for the particular instrument being valued.
- 100.3. The own credit risk associated with a liability is important to its *value* as the credit risk of the issuer is relevant to the *value* in any transfer of that liability. Where it is necessary to assume a transfer of the liability regardless of any actual constraints on the ability of the counterparties to do so, eg, in order to comply with financial reporting requirements, there are various potential sources for reflecting own credit risk in the *valuation* of liabilities. These include the yield curve for the entity's own bonds or other debt issued, credit default swap spreads, or by reference to the *value* of the corresponding

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asset. However, in many cases the issuer of a liability will not have the ability to transfer it and can only settle the liability with the counterparty.

- 100.4. Collateral: The *assets* to which the holder of an instrument has recourse in the event of default need to be considered. In particular, the *valuer* needs to understand whether recourse is to all the *assets* of the issuer or only to specified *asset(s)*. The greater the *value* and liquidity of the *asset(s)* to which an entity has recourse in the event of default, the lower the overall risk of the instrument due to increased recovery. In order not to double count, the *valuer* also needs to consider if the collateral is already accounted for in another area of the balance sheet.
- 100.5. When adjusting for own credit risk of the instrument, it is also important to consider the nature of the collateral available for the liabilities being valued. Collateral that is legally separated from the issuer normally reduces the credit exposure. If liabilities are subject to a frequent collateralisation process, there might not be a material own credit risk adjustment because the counterparty is mostly protected from loss in the event of default.

110. Liquidity and Market Activity

- 110.1. The liquidity of financial instruments range from those that are standardised and regularly transacted in high volumes to those that are agreed between counterparties that are incapable of assignment to a third party. This range means that consideration of the liquidity of an instrument or the current level of market activity is important in determining the most appropriate valuation approach.
- 110.2. Liquidity and market activity are distinct. The liquidity of an *asset* is a measure of how easily and quickly it can be transferred in return for cash or a cash equivalent. Market activity is a measure of the volume of trading at any given time, and is a relative rather than an absolute measure. Low market activity for an instrument does not necessarily imply the instrument is illiquid.
- 110.3. Although separate concepts, illiquidity or low levels of market activity pose similar valuation challenges through a lack of relevant market data, ie, data that is either current at the valuation date or that relates to a sufficiently similar *asset* to be reliable. The lower the liquidity or market activity, the greater the reliance that will be needed on valuation approaches that use techniques to adjust or *weight* the inputs based on the evidence of other comparable transactions to reflect either market changes or differing characteristics of the *asset*.

120. Valuation Control and Objectivity

- 120.1. The control environment consists of the internal governance and control procedures that are in place with the objective of increasing the confidence of those who *may* rely on the *valuation* in the valuation process and conclusion. Where an external *valuer* is placing reliance upon an internally performed valuation, the external *valuer* *must* consider the adequacy and independence of the valuation control environment.
- 120.2. In comparison with other *asset* classes, financial instruments are more commonly valued internally by the same entity that creates and trades them. Internal valuations bring into question the independence of the *valuer* and hence this creates risk to the perceived objectivity of *valuations*.

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Please reference 40.1 and 40.2 of the IVS Framework regarding *valuation* performed by internal *valuers* and the need for procedures to be in place to ensure the objectivity of the *valuation* and steps that *should* be taken to ensure that an adequate control environment exists to minimise threats to the independence of the *valuation*. Many entities which deal with the *valuation* of financial instruments are registered and regulated by statutory financial regulators. Most financial regulators require banks or other regulated entities that deal with financial instruments to have independent price verification procedures. These operate separately from trading desks to produce *valuations* required for financial reporting or the calculation of regulatory capital guidance on the specific valuation controls required by different regulatory regimes. This is outside the scope of this standard. However, as a general principle, *valuations* produced by one department of an entity that are to be included in financial statements or otherwise relied on by third parties *should* be subject to scrutiny and approval by an independent department of the entity. Ultimate authority for such *valuations* *should* be separate from, and fully independent of, the risk-taking functions. The practical means of achieving a separation of the function will vary according to the nature of the entity, the type of instrument being valued and the materiality of the *value* of the particular class of instrument to the overall objective. The appropriate protocols and controls *should* be determined by careful consideration of the threats to objectivity that would be perceived by a third party relying on the *valuation*.

120.3. When accessing your valuation controls, the following include items you *should* consider in the valuation process:

- (a) establishing a governance group responsible for valuation policies and procedures and for oversight of the entity's valuation process, including some members external to the entity,
- (b) systems for regulatory compliance if applicable,
- (c) a protocol for the frequency and methods for calibration and testing of valuation models,
- (d) criteria for verification of certain *valuations* by different internal or external experts,
- (e) periodic independent validation of the valuation model(s),
- (f) identifying thresholds or events that trigger more thorough investigation or secondary approval requirements, and
- (g) identifying procedures for establishing *significant* inputs that are not directly observable in the market, eg, by establishing pricing or audit committees.

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